



## Description

The Crestron Green Light Power Pack is a standalone room controller designed to communicate with photocells, occupancy sensors, and control stations to automatically control lighting in any room. The entire Crestron Green Light Power Pack (GLPP) family provides cost-effective and powerful lighting control for classrooms, small offices, and open-plan offices. Ideal for new construction as well as retrofitting existing buildings, Crestron® GLPPs are designed to install and commission quickly and easily. Additionally, the GLPP can be connected to a central control system, enabling it to become an integral part of the building energy management system.

### Models

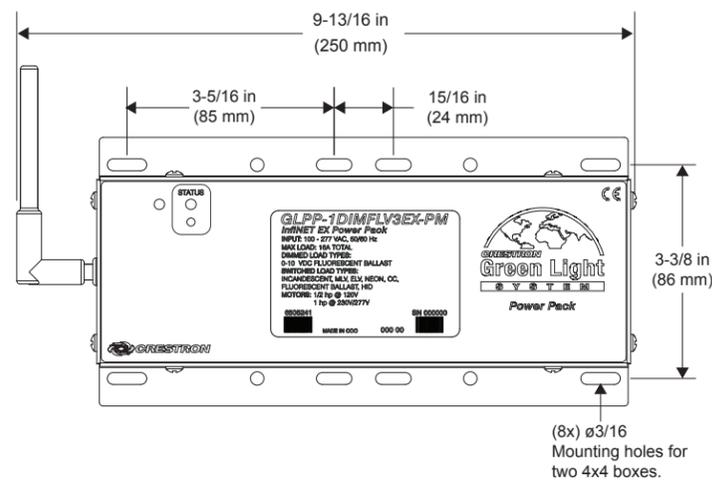
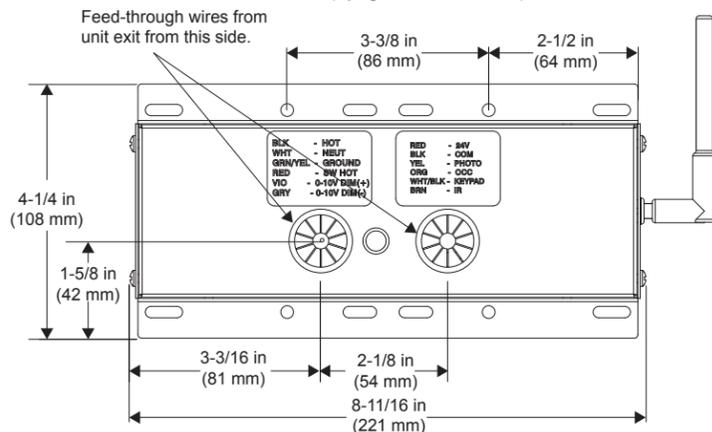
MODEL	DESCRIPTION
GLPP-DIMFLVEX-PM	Crestron Green Light Power Pack, 1-Channel 0–10V Dimmer with infiNET EX Control and Built-in Power Monitoring
GLPP-1DIMFLV2EX-PM	Crestron Green Light Power Pack, 2-Channel 0–10V Dimmer with infiNET EX Control and Built-in Power Monitoring
GLPP-1DIMFLV3EX-PM	Crestron Green Light Power Pack, 3-Channel 0–10V Dimmer with infiNET EX Control and Built-in Power Monitoring

**NOTE:** These models meet the requirements of UL® 2043 for installation in an environmental air-handling (plenum) space.

### Physical Description

This section provides information on the connections, controls and indicators available on the GLPP-DIMFLVEX-PM.

#### GLPP-DIMFLVEX-PM Overall Dimensions (Flying Leads Not Shown)



**WARNING:** To avoid fire, shock, or death, turn off power at circuit breaker or fuse and test that power is off before wiring!

**NOTES:** Observe the following points.

- Install and use this product in accordance with appropriate electrical codes and regulations.
- A licensed electrician should install this product.

**NOTE:** Before using the GLPP-DIMFLVEX-PM, ensure the device is using the latest firmware. Check for the latest firmware for the GLPP-DIMFLVEX-PM at [www.crestron.com/firmware](http://www.crestron.com/firmware). Firmware is loaded onto the device using Crestron Toolbox™ software.

#### GLPP-DIMFLVEX-PM Series Specifications

SPECIFICATION	DETAILS
Load Ratings	
Dim or Switched Channels	1, 2, or 3 switched or dimmed (0–10 V) loads (depending on model)
Per Unit	16 A at 100–277 Vac, 50/60 Hz (20 A, de-rated to 80%)
Dim Load Types (for dimming models)	0–10 V fluorescent ballast (4-wire); 0–10 V LED drivers; 60 mA max current sink
Power Requirements	
Main Power	100–277 Vac, 50/60 Hz
Available Sensor Power	2.5 W at 24 Vdc (sufficient for powering multiple sensors)
Enclosure	20-gauge galvanized steel enclosure; designed for mounting to two (2) adjacent standard 4" square electrical junction boxes (some models may need a box extension to meet code requirements); 3-channel versions require a box depth of 2.125 in (54 mm)

### Additional Resources

Visit the product page on the Crestron website ([www.crestron.com](http://www.crestron.com)) for additional information and the latest firmware updates. Use a QR reader application on your mobile device to scan the QR image.



### Available Accessories

The GLPP-DIMFLVEX-PM can be used with a variety of equipment.

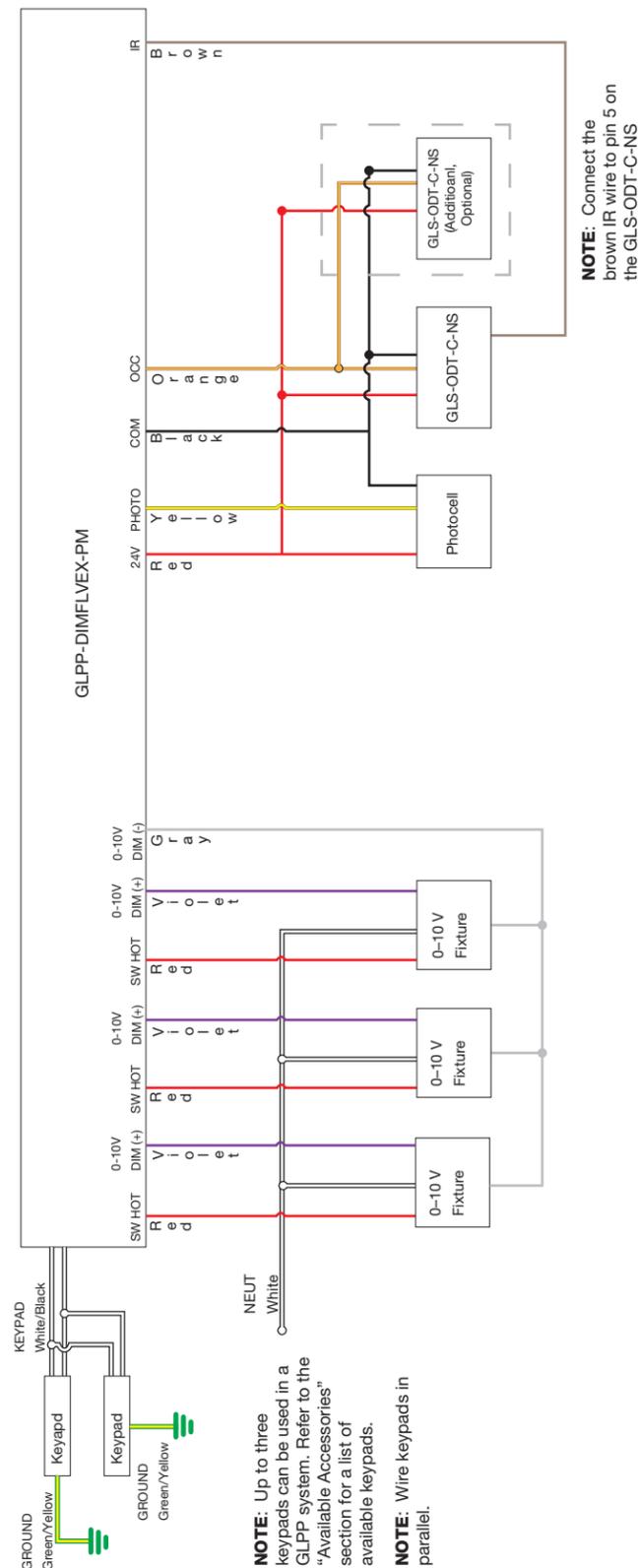
ACCESSORY	DESCRIPTION
GLPPA-KP	In-Wall Master Scene Keypad for GLPP
GLPPA-KP1	In-Wall Zone Keypad for GLPP, Channel 1 Control
GLPPA-KP2	In-Wall Zone Keypad for GLPP, Channel 2 Control
GLPPA-KP3	In-Wall Zone Keypad for GLPP, Channel 3 Control
GLPPA-KP4	In-Wall Zone Master Keypad for GLPP
GLS-OIR-C-NS	Passive Infrared Ceiling Mount Occupancy Sensor
GLS-ODT-C-NS	Dual-Technology Ceiling Mount Occupancy Sensor
GLS-LOL	Crestron Green Light Photosensor, Open-Loop
GLS-LCL	Crestron Green Light Photosensor, Closed-Loop
GLS-LEXT	Crestron Green Light Photosensor, Outdoor

## Wiring

**WARNING:** Turn off the power to the GLPP-DIMFLVEX-PM before wiring. Wiring with the power on can result in serious personal injury and damage to the device.

**CAUTION:** This product must be installed with 14 AWG (2.5 mm<sup>2</sup>) and 18 AWG (0.75 mm<sup>2</sup>) wires that comply with local electrical codes.

#### Typical Wiring Diagram



## Commissioning

The GLPP-DIMFLVEX-PM must be commissioned before it can be used. During commissioning, the scene selections are configured along with the daylighting levels. The actions of the occupancy sensors are also configured.

### Scene Settings

The following table shows the default scene settings.

#### Default Scene Settings

SCENE	DIMMING LEVEL
1	100% (All loads)
2	50%
3	25%
4	80%
5	60%
6	40%
7	20%
8	0%

### Change the Scene Settings

The scene settings can be changed to accommodate the needs of the room or occupants. The scenes are changed through the GLPPA-REMOTE-PROG, the GLPPA-REMOTE-USER, or the GLPPA-KP (all sold separately).

### Edit the Scenes Using Remote

Use the GLPPA-REMOTE-PROG or the GLPPA-REMOTE-USER to change the default scene settings for scenes 1 through 8.

1. Use LOAD 1 ON/OFF, LOAD 1 ▲, or LOAD 1 ▼ buttons to set the load to the desired level. Repeat this process for the other connected loads. Alternatively, use the MASTER ON/OFF, MASTER ▲, or MASTER ▼ buttons to set the levels of all connected loads.
  2. Press and hold the appropriate SCENE 1 through SCENE 8 button for 2 seconds to save the scene. The GLPP beeps when the scene is saved.
- NOTE:** Only Scene 1 enables daylighting.
3. Repeat the steps above for all scenes that need to be configured.

### Edit the Scenes Using 2-Wire Keypad

Use the GLPPA-KP as another means of editing the scenes if using the 4-button keypad setup. Follow the procedure below to edit the scenes using the keypad.

1. Press and hold the ALL ON and ALL OFF buttons on the keypad for 3 seconds to put the GLPP into Program mode. The LED on the keypad blinks to indicate that the device is in Program mode.
  - Program mode exits without saving after 30 seconds of button inactivity.
  - Program mode immediately exits without saving when the ALL OFF button is pressed.
2. In Program mode, the top three buttons can be used for manual control of loads 1 through 3. The ALL ON button controls load 1, the SCENE 1 button controls load 2, and the SCENE 2 button controls load 3. The buttons operate in the following manner:
  - Press to toggle the load between full on and full off (no fade time). When the button is pressed, the load turns full on if the load is currently off. The load stays on if the load is currently on.
  - Hold to cycle dim. Cycle dimming allows the device to dim to off as long as the button is held through a 1-second pause at low end.

**NOTE:** All connected loads must be assigned a load level for each scene.

3. To save the current light levels to a scene, hold the ALL OFF button, and then tap the SCENE 1 or SCENE 2 button that the levels should be saved to. The keypad exits Program mode immediately upon saving, resetting a scene, or after 1 minute. To reset a scene to its factory default levels, in Program mode, hold the ALL OFF button and the desired scene button for 5 seconds.

## Set Up Daylighting

Daylighting, also known as daylight harvesting, continuously uses sunlight information from the photocell to control the electric artificial lighting level. Daylighting ensures adequate environment lighting while saving as much energy as possible. Set points, known as the “min,” “day,” and “night” points, are used to determine how low the load levels should be during the day and how high the load levels should be at night.

**NOTE:** Pay careful attention when commissioning open- or closed-loop daylighting. Accidentally pressing the wrong buttons on the GLPPA-REMOTE-PROG may clear set points and follow the wrong slope or curve (e.g., while setting up closed-loop, pressing a MIN or NIGHT button intended for open-loop daylighting.)

For proper operation of open- or closed-loop daylighting, commission during the day while meeting the following conditions:

- The outdoor conditions should be constant. Avoid commissioning when clouds are rapidly exposing and then hiding the sun.
- Commission preferably during a time that requires artificial lighting, not when the lights have to be dimmed to a minimum level.

## Set Up the Open-Loop Daylighting Levels

In open-loop daylighting, each channel is assigned a min, day, and night set point and allows each channel to dim independently.

To commission open-loop daylighting, follow the procedure outlined below.

1. Establish the min set point (optional).
  - a. Adjust all loads to the minimum light level allowed in the room.
  - b. Press and hold LOAD 1 MIN button on the GLPPA-REMOTE-PROG for 2 seconds to save the value for load 1. A beep confirms that the level is saved.
  - c. Repeat for all connected loads.
2. Establish the day set point.
  - a. Adjust all loads to their desired level. Take the current sunlight contribution into account when determining the load levels.
  - b. Press and hold the LOAD 1 DAY button on the GLPPA-REMOTE-PROG for 2 seconds to start recording the levels for load 1. The GLPP beeps to indicate that the recording process has started. All connected loads go to 100%, then to 0%, and finally back to their initial levels. At this point, the GLPP calculates and saves the night set point. If daylighting was set up successfully, the GLPP emits one long beep. If there is an error, the GLPP emits three short beeps.
  - c. Repeat for all connected loads.
4. Establish the night set point (optional).

**NOTE:** When the day set point is established, the night set point is automatically calculated and saved. However, a custom night set point can be saved.

- a. Return to the location at night when there is no natural light in the room.
- b. Adjust the brightness of the artificial lights so that the room is adequately lit.

**NOTE:** For the night set point, the sensor must detect less light than the established day set point. If it detects more light, setting the night set point fails.

- c. Press and hold the LOAD 1 NIGHT button on the GLPPA-REMOTE-PROG for 2 seconds to set the night level. The GLPP emits one long beep to confirm that the night set point is saved. Repeat for all connected loads.

## Clear Daylighting

To remove daylighting for a particular channel, using the GLPPA-REMOTE-PROG, press and hold the LOAD 1, LOAD 2, or LOAD 3 DAY button until a short beep sounds. A long beep signifies process completion. Within 5 seconds, press and hold LOAD 1, LOAD 2, or LOAD 3 NITE button for the same channel until a short beep sounds. Daylighting has now been cleared for this channel.

## Set Up the Closed-Loop Daylighting Levels

In closed-loop daylighting, all channels are assigned to a single min, day, and night set point, and all channels are controlled in unison.

**NOTE:** When setting the min, day, and night set point, set all channels to the same level. To ensure even load levels, use the MASTER ON/OFF button to turn all loads on and then use the MASTER RAISE/LOWER button to fine-tune the level.

1. Establish the min set point (optional).
  - a. Adjust all loads to the minimum light level allowed in the room.
  - b. Press and hold the CLOSED-LOOP MIN button on the GLPPA-REMOTE-PROG for 2 seconds to save the value. A beep confirms that the level is saved.
2. Establish the day set point.
  - a. Adjust all loads to their desired level. Take the current sunlight contribution into account when determining the load levels.
  - b. Press and hold the CLOSED-LOOP DAY button on the GLPPA-REMOTE-PROG for 2 seconds to start recording the levels. The GLPP beeps to indicate that the recording process has started. All connected loads go to 100%, then to 0%, and finally back to their initial levels. A this point, the GLPP calculates and saves the night set point. If daylighting is set up successfully, the GLPP emits one long beep. If there is an error, the GLPP emits three short beeps.
3. Establish the night set point (optional).

**NOTE:** When the day set point is established, the night set point is automatically calculated and saved. However, a custom night set point can be saved.

- a. Return to the location at night when there is no natural light in the room.
- b. Adjust the brightness of the artificial lights so that the room is adequately lit.

**NOTE:** For the night set point, the sensor must detect less light than the established day set point. If it detects more light, setting the night set point fails.

- c. Press and hold the CLOSED-LOOP NIGHT button on the GLPPA-REMOTE-PROG for 2 seconds to set the night level. The GLPP emits one long beep to confirm that the night set point has been saved.

## Clear Daylighting

To remove daylighting for a particular channel, using the GLPPA-REMOTE-PROG, perform steps 2 and 3 one after another with minimal delay between operations.

## Set Up the Occupancy Sensor

To set up the occupancy sensor and the desired recalled scene upon entry or exit of the room, follow the procedure below. The GLPP beeps once the scene selection is saved.

1. Press and hold the desired ENTRY button on the GLPPA-REMOTE-PROG.
  - ENTRY NONE: The loads are not turned on upon entering the room.
  - ENTRY SCENE 1: Scene 1 is recalled upon entering the room. Daylighting is enabled if the system was commissioned.
  - ENTRY SCENE 6: Scene 6 is recalled upon entering the room.
  - ENTRY SCENE 7: Scene 7 is recalled upon entering the room.
2. Press and hold the desired EXIT button on the GLPPA-REMOTE-PROG.
  - EXIT OFF: The loads are turned off upon exiting the room.
  - EXIT SCENE 8: Scene 8 is recalled upon exiting the room.

## Troubleshooting

The following table provides corrective action for possible trouble situations. If further assistance is required, please contact a Crestron customer service representative.

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
The device does not function.	The dimmer is not receiving line power.	Verify that the dimmer is properly connected to the HOT and NEU power lines and the circuit breaker is closed.
	The lamps are burned out.	Check the lamp.
	There is an open circuit.	Check the wiring.
The dimmer powers up, but the load does not turn on.	A short circuit exists on the dimmer output, and the protection circuit has activated.	Check the wiring.
The dimmer cycles off and on.	A thermal overload condition exists.	Check that the total load is within the limits.

## Wireless Communications

The device connects to the Crestron network via the infiNET EX communications protocol. Use the procedures outlined below to join or leave an infiNET EX network and to verify communications between the device and the control system.

## Joining an infiNET EX Network

Before a device can be used in a lighting system, it must first join an infiNET EX network. To join an infiNET EX network, the device must be acquired by an infiNET EX gateway.

**NOTE:** A device can be acquired by only one gateway.

1. Put the infiNET EX gateway into Acquire mode from the unit itself or from Crestron Toolbox™ software. Refer to the gateway’s manual at www.crestron.com/manuals for details.

**NOTE:** In an environment where multiple gateways are installed, only one gateway should be in Acquire mode at any time.
2. Put the device into Acquire mode:
  - a. Tap the top button three times and then press and hold it down (tap-tap-tap-press+hold) until the top LEDs on the device blink once (this can take up to 10 seconds).
  - b. Release the button to start the acquire process. The top LED blinks slowly to show that the device is actively scanning the infiNET EX network.
    - The top two LEDs turn on for 5 seconds to show that the device has been successfully acquired by the infiNET EX network.
    - The top LED blinks fast to indicate that the device was not successfully acquired by the infiNET EX network. Tap the top button to acknowledge the failure. Ensure the gateway is in Acquire mode and within range before attempting the acquire process again.
3. Once all devices have been acquired, take the gateway out of Acquire mode. Refer to the gateway’s manual for details.

## Leaving an infiNET EX Network

To leave an infiNET EX network, put the device into Acquire mode, as described in “Joining an infiNET EX Network” above, when no gateway is in Acquire mode.

## Verifying Communications Status

To check the communications status of the device, tap the top button three times and then press and hold it down (tap-tap-tap-press+hold) for up to 2 seconds. The LED blinks to indicate the communications status. Refer to the following table for details.

LED	COMMUNICATIONS STATUS
Turns on for 5 seconds	The device is communicating with the control system.
Blinks three times	The device is communicating with the gateway, but the gateway is not communicating with the control system.
Blinks twice	The device was previously joined to the network but is not communicating with the gateway.
Blinks once	The device is not joined to the network.

This product is Listed to applicable UL Standards and requirements by Underwriters Laboratories Inc.



### Federal Communications Commission (FCC) Compliance Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**CAUTION:** Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user’s authority to operate the equipment.

**NOTE:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case

the user will be required to correct the interference at his own expense.

### Industry Canada (IC) Compliance Statement

CAN ICES-3(A)/NMB-3(A)

The product warranty can be found at [www.crestron.com/warranty](http://www.crestron.com/warranty).

The specific patents that cover Crestron products are listed at [patents.crestron.com](http://patents.crestron.com).

Certain Crestron products contain open source software. For specific information, please visit [www.crestron.com/opensource](http://www.crestron.com/opensource).

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This document was written by the Technical Publications department at Crestron.

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**Installation - DOC. 7210C**  
**(2031030)**  
**06.16**  
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