

V-Line[®] **Gen4**[™] V4295

Installation Guide

Thank you for purchasing the
V-Line® **Gen4**™ LED Module!

Support

If you have questions after reading this information or would like our advice on your project, call us before working with any product from i2Systems.

i2Systems Technical Support is available from 9 a.m. to 5 p.m. EST by phone at +1.860.567.0708 or email at support@i2systems.com.

A free copy of this installation guide is available online at www.i2systems.com along with these resources:

- Gen4 V4295 Spec Sheet
- LightLink LL-205 Installation Guide
- Power Box PS24V75W-E05PW Datasheet

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Product information is subject to change without notice.

Introduction

Use these instructions to plan, install, and wire your new Gen4 module. Proper installation will ensure this LED module will provide superior linear architectural lighting with minimal maintenance and electric consumption for many years.

WARNING: Only a qualified electrician should install i2Systems products.

While it may be tempting to skip sections, we assure you that reading this material will help you to avoid problems and speed up the installation process.

Identify all parts

- Familiarize yourself with the LED module, Power Box, and associated accessories

Review the installation site

- Pick an accessible area that allows for future maintenance and/or service of the LED module
- Review the temperature and environmental conditions to ensure the LED module operates within recommended ratings as outlined in this guide

Install the LED module

- Use the adjustable or fixed brackets to secure the module to the mounting surface
- Connect multiple modules in a run, if applicable

Wire the module

- Use the wiring diagram that best describes your installation criteria

Electrical Warnings

Failure to follow these warnings could cause injury or death, damage the LED module, and/or void the warranty.

- Read and understand the LED module installation instructions and safety labels before you begin your installation.
- Turn off the power before installing or servicing the LED module and/or connecting or disconnecting individual units.
- Follow all national and local electrical and construction codes and regulations.
- Avoid all temptation to disassemble the LED module because there are no serviceable parts and tampering with it could cause shock.
- Use only LED modules marked for exterior use in outdoor applications.
- Comply with the maximum voltage rating of the LED module.
- Operate the LED module within the specified temperature and environmental ranges.
- DO NOT make live connections, also known as hot swapping.

LED Module Maintenance

Clean the LED module with mild soap and water only and never immerse or soak the LED module in liquid.

Avoid damaging the optic by cleaning it with products that do not contain plasticizers.

Never clean the LED module with high-pressure washers or pointed objects as they can damage the LED module and potentially breach the seals.

Certifications



IP66

Installation Site Considerations

i2Systems designs its LED modules for an extended, trouble-free operating life but all electronic equipment requires cleaning, service, and, eventually, relamping.

As part of the installation process, make sure you install the LED module with a simple, inexpensive means of safely accessing the LED module in the future.

i2Systems LED modules are not for use in applications that would require scaffolding, swing stages, cranes, or any exotic means of accessing the LED modules for replacement and/or relamping. You will void the warranty if you create such an installation without first obtaining written permission from i2Systems management.

Temperature Considerations

This LED module is rated for an operating temperature range of -20 to 40°C with a rated maximum case temperature of 50°C. After installation, measure the case temperature to ensure it will not exceed 50°C on any point on the housing at worst-case ambient temperature.

The LED module has i2Systems' Active Thermal Management (ATM), which will reduce power and therefore the case temperature if the LED module overheats. However, you should not rely on ATM to regulate temperature as part of the normal operation of the LED module.

Failure to operate the LED module within specified operating and case temperature guidelines will void the warranty.

Situations that would cause the case temperature to exceed 50°C include:

- Areas where the ambient temperature is above 40°C
- Direct sunlight in hot climates
- Sealed compartments
- Between panes of glass or directly behind a glass window
- Inside a tight and/or insulated space

Should the case temperature exceed the maximum rating of 50°C, you can reduce power to the LED module by dimming it, decrease the ambient temperature, increase the airflow or volume of air around the LED module, and/or remove the LED module and install a lower power LED module.

Never install the LED module in applications that have a greater-than-average ambient temperature variation. Rapid heating and cooling, beyond that which occurs normally in nature, may damage the LED module.

If you have any questions or concerns about temperature as it relates to the LED module, call +1.860.567.0708 before you begin the installation process.

Wet Location/Outdoor Use LED Module Labeling

Use only wet location LED modules for exterior applications.

LED modules marked with an “N” are intended for indoor use only. They should not be used for exterior applications.

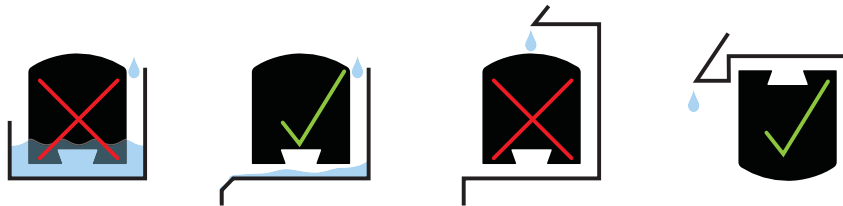
V4295A-46BB 

V495A-46BD 

Outdoor Installation Considerations

You must install and operate all i2Systems LED modules within the recommended temperature and environmental ratings.

- LED modules rated for exterior applications are not rated for submersible use. You should not mount the LED module in a location that has or may have standing water.
- You should never install an LED module where there is or may be moving water from runoff or downspouts.



It is good practice to seal all LED modules and junction boxes with electronics-grade RTV silicone sealant. This will ensure that moisture cannot enter or accumulate in wiring compartments, cables, or other electrical parts when you install the LED module in wet or damp locations.

You should also install a loop into the cable at the LED module end to prevent water from wicking into the LED module. Inspect the cable after installation to ensure that the cable covering will remain intact and there will be no chafing, pulling, or cutting that could leak water into the LED module.

Wet Location Connection Considerations

i2Systems offers two options when ordering the Gen4:

- Hardwire (Standard)
- Plug-Together (Optional)

If you are installing a Gen4 LED module equipped with the connector Plug-Together option, make sure all connector plugs are fully seated during the installation process. For the last LED module in any run, use End Plug Model 720-02050 to cap any unused connector. Failure to do so may result in intermittent connection, corrosion, and/or leakage in the main housing.

Gen4 Specifications



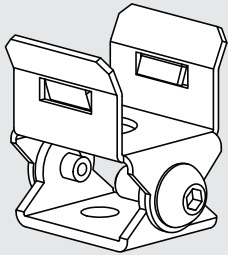
Watts:	4.5W/11", 7W/16", 9W/22", 14W/32", 18W/42", 20W/48"
Input Voltage:	20-30V DC, 24V DC Nominal
Operating Temp:	-20°C to 40°C
Max Case Temp (Tc):	50°C
Humidity:	0 to 95% Non-Condensing

Use the following information to ensure that you have the proper components in place before you start the installation. Note that some of the components are optional, depending on whether you want to install the dimming feature and/or connect multiple LED modules to form a longer line.

Call i2Systems directly at +1.860.567.0708 or contact your local distributor if you have questions or believe components are missing from your product package.

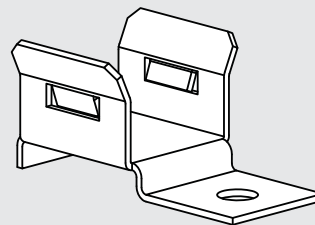
Gen4 Mounting Brackets (Use One Type)

Depending how your LED module was specified during the ordering process, you will find one of the following bracket types in your product package.



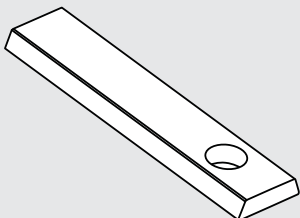
VLA-10 Adjustable

Stainless steel adjustable mounting bracket with stainless steel screws. Installs to back side of the LED module.



VLA-11 Fixed

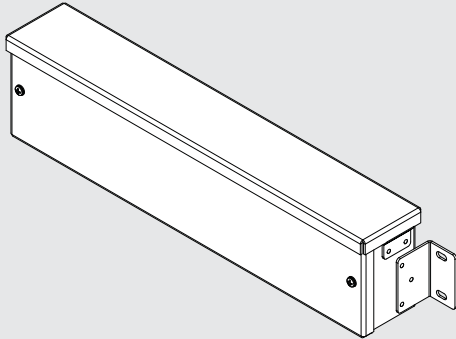
Stainless steel fixed mounting bracket with stainless steel screws. Installs to back side of the LED module.



VLA-6 Fixed

Fixed aluminum mounting bracket with stainless steel screws. Mates with dovetail slots on LED module ends.

Power Box for Gen4



Outdoor Power Box PS24V75W-E05PW

120V-277V AC Input
Powers up to 16 Feet of Gen4

Dimming Components for the Gen4 (Optional)



LightLink LL-205-10V

Use as a stand-alone Dimmer or as a bridge to a 0 to 10V Dimming Input (sink or source) 120-277V AC Input.

Dimming Cable (Optional)

- Indoor: 685-01561-100
- Outdoor: 685-02026-100

For dimming installations, i2Systems provides both indoor and outdoor rated Dimming Cable for your wiring convenience. Use the Dimming Cable to connect the LightLink LL-205 Dimmer to Power Boxes and to “daisy-chain” Power Boxes together. The cable is available in 100-foot spools.

Plug-Together Cables for the Gen4 (Optional)

The input cables and end caps are required if you are installing a Gen4 LED module equipped with the connector Plug-Together option. Note that extension cables are optional for these installations.



Input Cable

(Need 1 Per Continuous Run)

15 Ft: 685-02047-15



Extension Cables

(Optional)

1 Ft: 685-02049-1

3 Ft: 685-02049-3

15 Ft: 685-02049-15



End Cap

(Need 1 Per Continuous Run)

720-02050

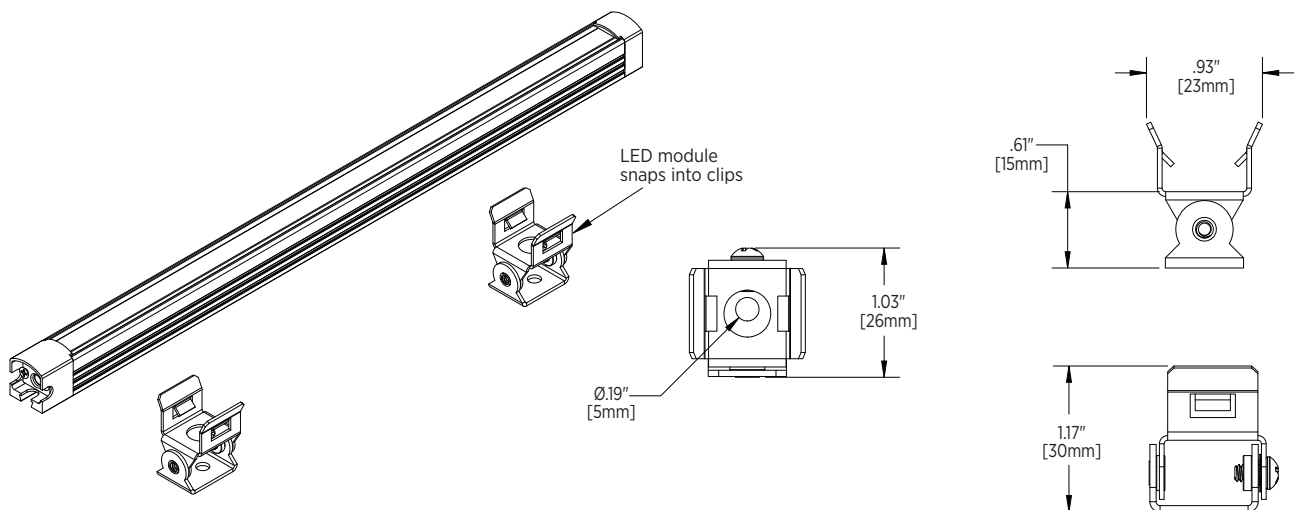
LED Module Installation

Select the bracket appropriate for your installation.

- Use the VLA-10 to set the angle at which the light washes or grazes over a wall or ensure the ability to change this angle in the future.
- Use one of the fixed brackets, VLA-11 or VLA-6, if the light should always strike the nearest vertical surface at 90°.

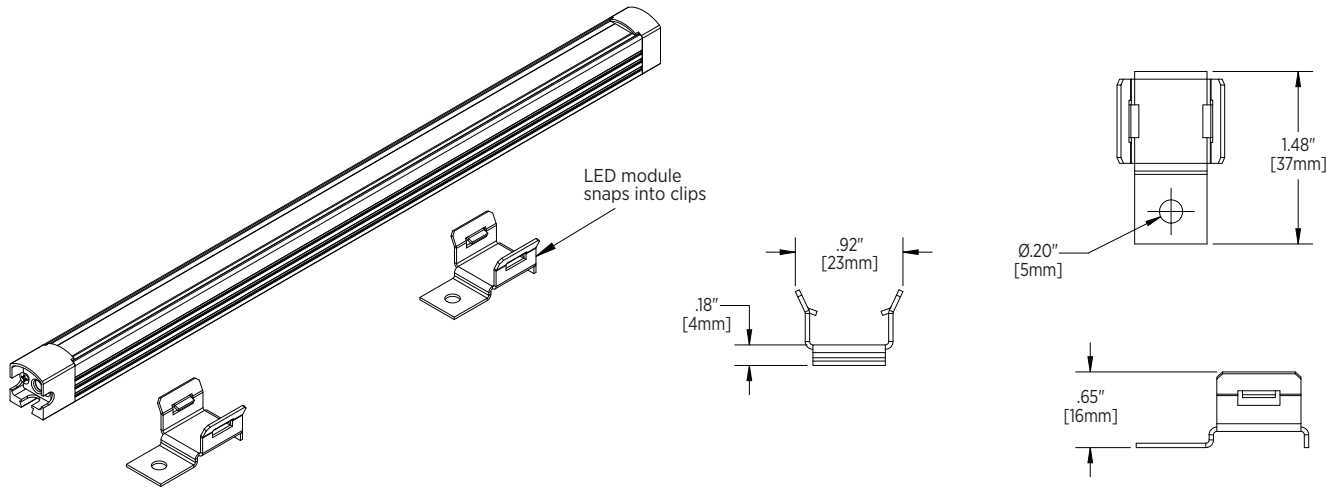
In installations where the LED module is at risk of falling, install a properly rated safety strap or safety cable (supplied by others) to both ends of the LED module.

Installing VLA-10 Adjustable Brackets



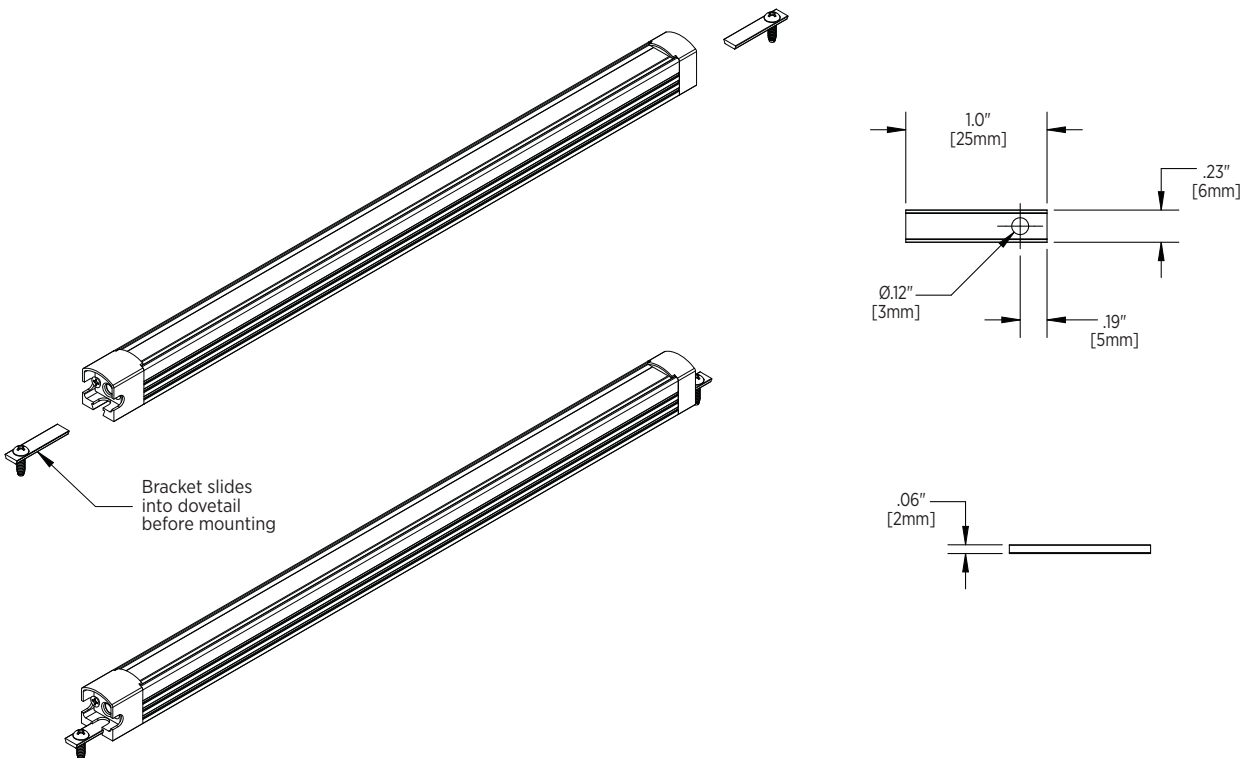
Use two VLA-10 brackets per Gen4 LED module.

Installing VLA-11 Fixed Brackets



Use two VLA-11 brackets per Gen4 LED module.

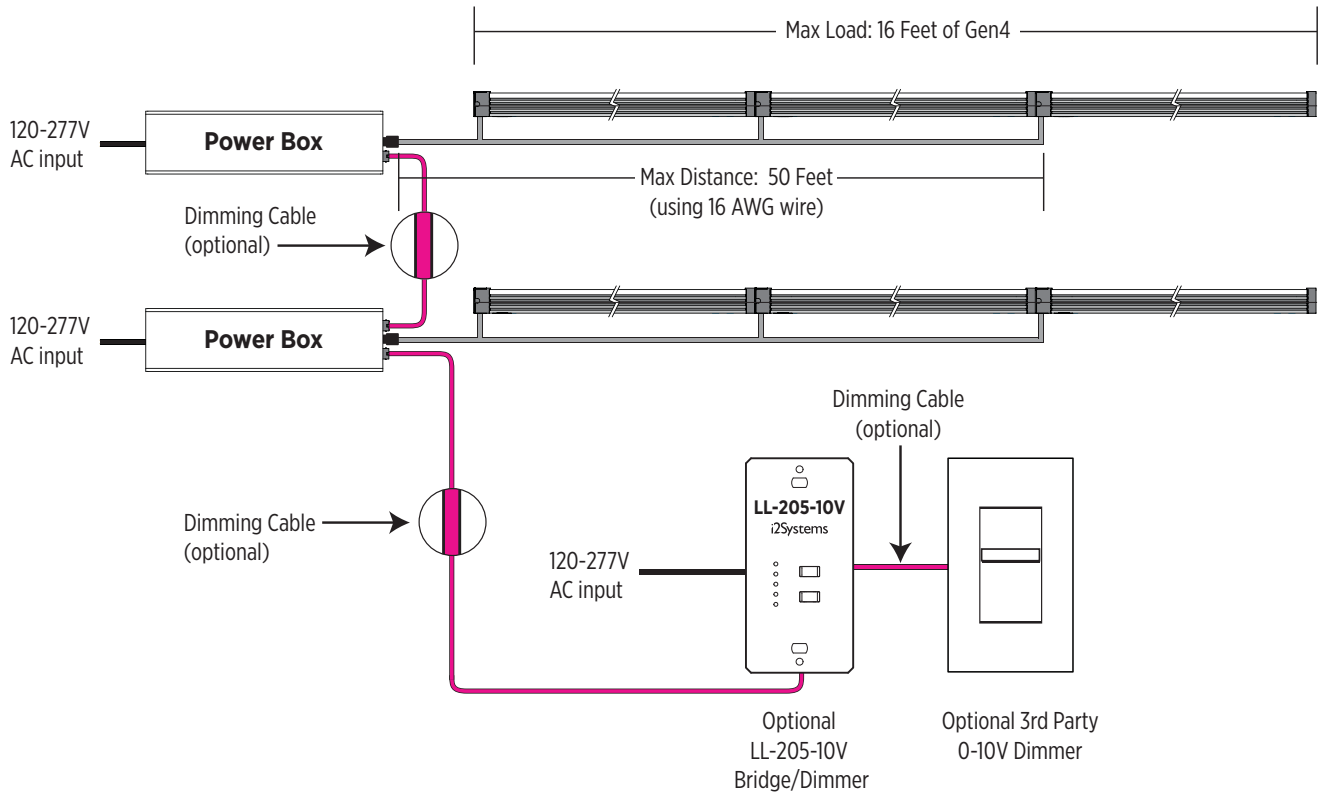
Installing VLA-6 Fixed Brackets



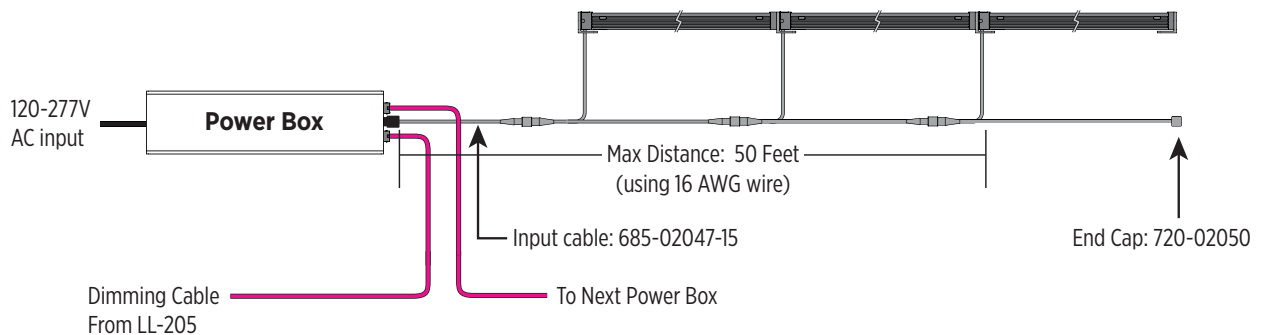
Use two VLA-6 brackets per Gen4 LED module.

System Layout

The diagram below illustrates a basic system installation using the hardwire LED module configuration with dimming functionality. If your installation does not require dimming, omit the LL-205, dimming cables, and third party dimmer.



The diagram below illustrates the same basic installation using the Plug-Together feature.



Wiring Restrictions

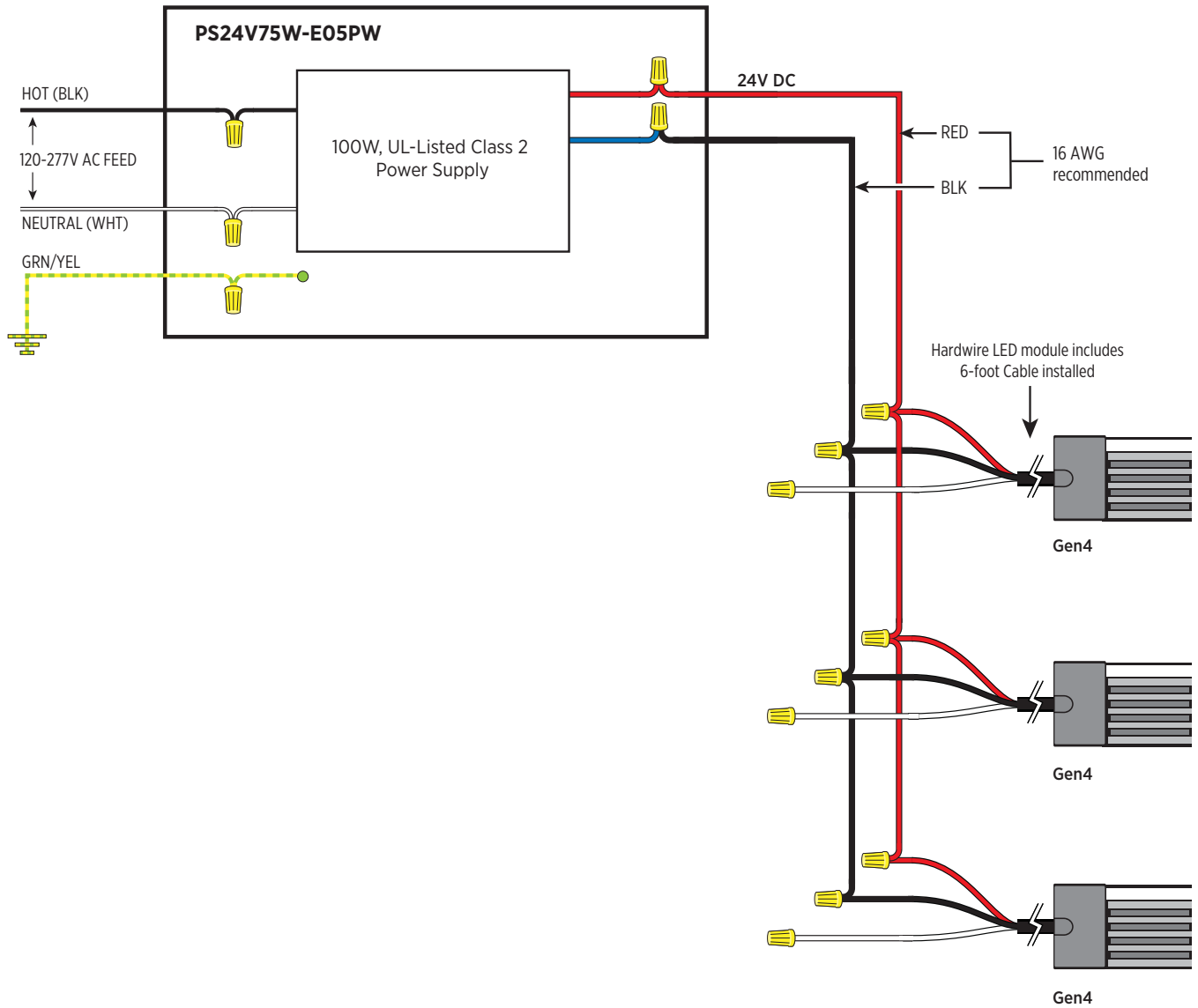
Always use a minimum of 16 AWG wire between the Power Box and LED modules. Never exceed the maximum distance of 50 feet from the last LED module to the Power Box or the maximum load of 16 feet of Gen4 LED module per PS24V75W-E05PW Power Box.

There is a limit of five (5) Power Boxes that the LL-205 Dimmer will dim and the distance between the LL-205 Dimmer and the last Power Box should not exceed 300 feet of Dimming Cable. Depending on the installation, exceeding this limit may cause flicker and/or reduce dimming performance.

Every installation is unique and should you experience a reduction in dimming performance, you may need to set up multiple LL-205 dimming zones.

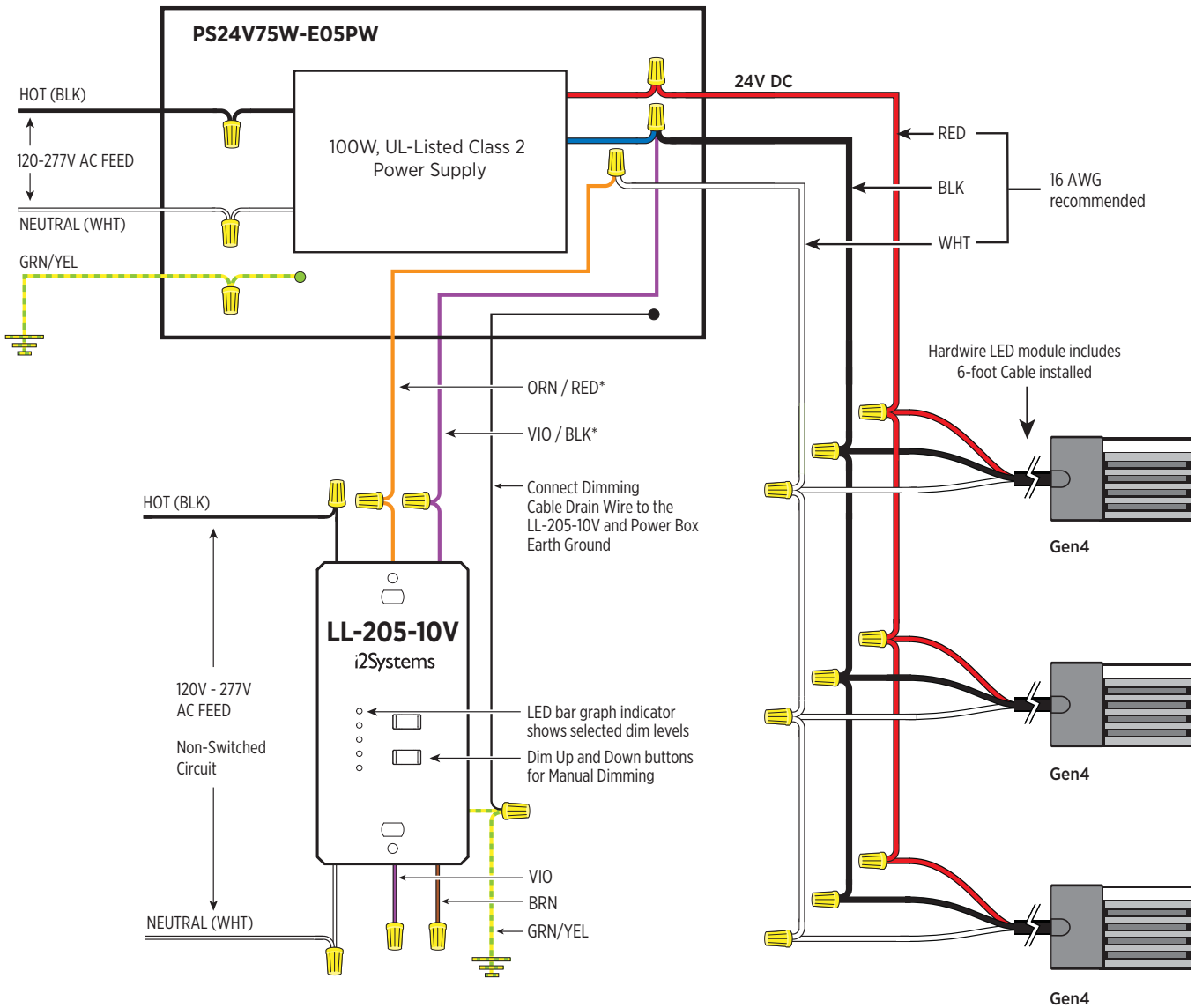
Call +1.860.567.0708 or email support@i2systems.com if you have further questions about dimming.

Installation: 100% Intensity, No Dimming, Hardwire



Note: For non-dimming installations, you should cut and cap each white wire using best industry practices.

Installation: Wall Mount, Push-Button Dimming, Hardwire



*Indoor Dimming Cable uses Red and Black Conductors. Outdoor Dimming Cable uses Orange and Violet.

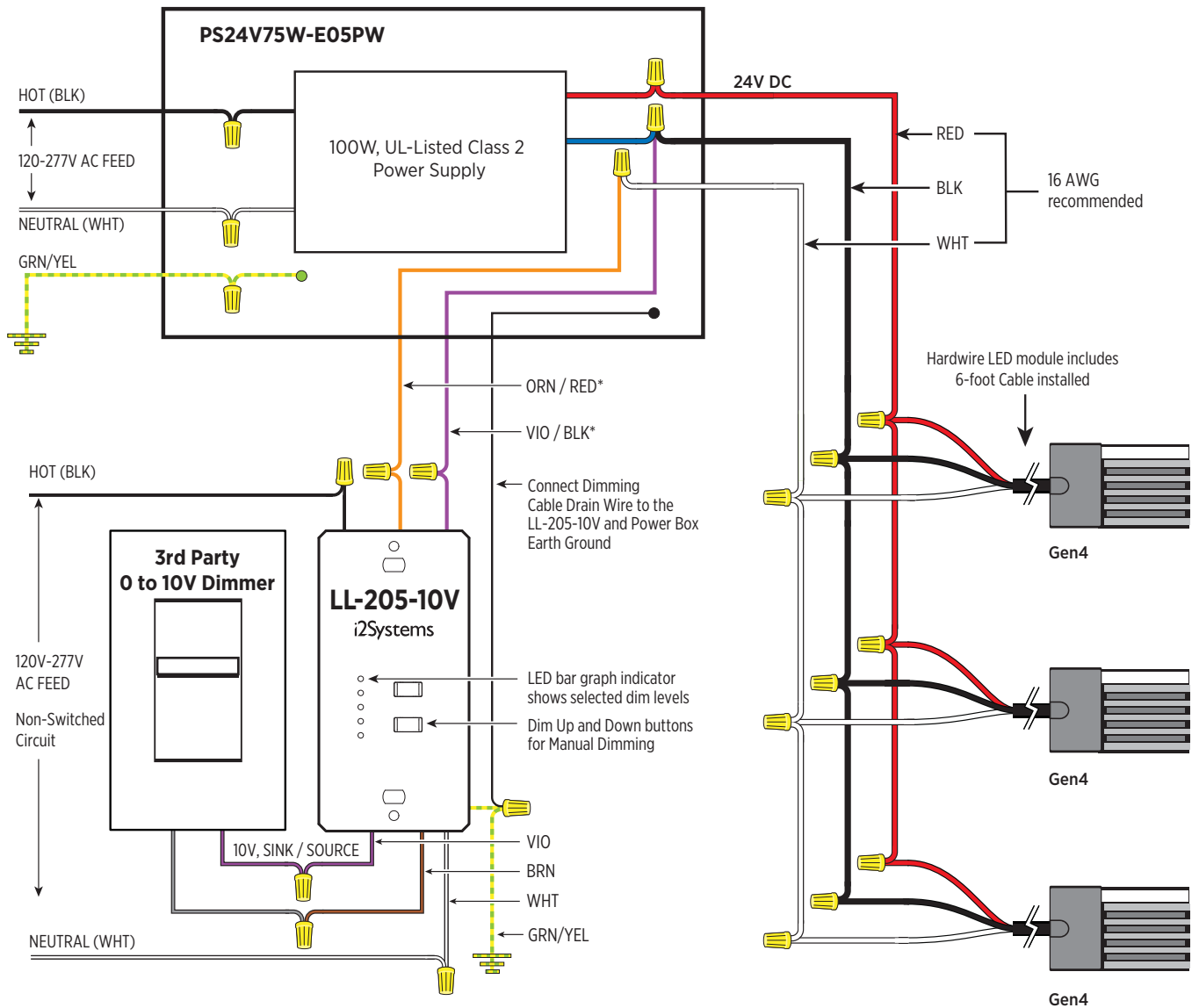
Operation

The LED bar graph will indicate the current dim level. Press and hold the top Dim button to increase the light intensity, and tap twice for 100% intensity. To decrease the light intensity, press and hold the bottom Dim button. Tap once to turn off the lights.

Use the Dimming Cables as specified on page 8 to combine or “daisy-chain” Power Boxes to a single LL-205, making sure you connect the Dimming Cable Drain Wire as shown above.

Note: You can use the LL-205-S or the LL-205-10V Dimmer for push-button dimming. Refer to the LL-205 Installation Guide for technical specifications on these products.

Installation: 0 To 10V Dimming, Sink or Source, Hardwire



*Indoor Dimming Cable uses Red and Black Conductors. Outdoor Dimming Cable uses Orange and Violet.

Operation

The LED bar graph will indicate the current dim level, based on 0 to 10V levels. The LL-205-10V reads these levels and translates them to i2Systems LightLink protocol, adjusting the light intensity of the connected Gen4 LED modules from 0% to 100% (less than 1V is equal to 0% and greater than 9V is equal to 100%).

Use the Dimming Cables as specified on page 8 to combine or “daisy-chain” Power Boxes to a single LL-205-10V, making sure you connect the Dimming Cable Drain Wire as shown above.

Note: Refer to the LL-205 Installation Guide for technical specifications on all available models of this Dimmer.

Frequently Asked Questions

Q: Can I connect the Gen4 directly to line voltage?

A: No. Connecting the Gen4 directly to line voltage or any voltage higher than 30V DC will damage the LED module and void the warranty. Use an i2Systems Power Box to convert line voltage to the proper voltage.

Q: I see the Gen4 is rated from 20-30V DC. Will the intensity vary over the voltage range?

A: For best performance and efficiency, nominal input voltage at the LED module is 24V DC. Long wire runs may result in reduced performance.

Q: Can I load the Power Box to the full wattage specified (i.e., 75W)?

A: Yes. The power supplies installed in i2Systems Power Boxes are derated (i.e. a 75W Power Box uses a 100W power supply). Refer to the Power Box Datasheet for additional details.

Q: Can I use a third party low voltage power supply?

A: While it is possible to use a third party 24V DC power source, we discourage this practice. Not all power supplies exhibit the same characteristics and a third party power supply may be incompatible, causing flickering or damage to the Gen4 LED module. Power Supplies that are not UL-Listed as Class 2 will void the LED module's UL safety listing. Any damage or reduced performance caused by a third party power supply will void the Gen4 warranty.

Q: For installations without dimming, what do I do with the white wires on the Gen4?

A: The white wires on the Gen4 are for dimming control and may be cut and capped using best industry practices. Refer to the diagram on page 14 of this installation guide.

Q: What is the maximum number of Gen4 LED modules the LL-205 will dim?

A: You may connect up to five (5) Power Boxes to a single LL-205 with a maximum wire distance of 300 feet between the LL-205 and the last connected Power Box.

Q: When using the LightLink LL-205 Dimming module, do I need a third party dimmer?

A: No. The LL-205 is often used as a standalone dimmer. This feature is useful for simple installations and/or troubleshooting dimming installations where the LightLink is able to override the incoming dimming signal to help pinpoint the problem.

Q: Can I mix and match i2Systems LED modules on the same LightLink dimmer?

A: Generally, the practice is not recommended; rather add a second LightLink dimmer and control both LightLinks with the same 0-10V Input.

Limited Warranty

1.1 Limited Warranty. Products are warranted to be free from defects in material and workmanship and to conform substantially to i2Systems' then-current (as of the date of Product shipment) user documentation and specifications for a period of three (3) years from the date of invoice (the "Warranty Period"), provided the Products are used under those operating conditions (including electrical values and environmental conditions) described in i2Systems' then-current user documentation and specifications for such Products. i2Systems shall not be liable under the foregoing warranty if Buyer fails to provide i2Systems with notice of the alleged defect during the Warranty Period.

1.2 Remedies. In the event a Product does not comply with the foregoing express warranty, Buyer may notify i2Systems within the Warranty Period and if so notified i2Systems will, at i2Systems' option: (a) provide a replacement for such Product or defective component or part thereof that has caused the warranty claim (such Product or defective component or part thereof that has caused the warranty claim, the "Warranty Item"); or (b) refund to Buyer the lesser of (1) the amount Buyer paid for the Warranty Item, or (2) Buyer's cost to replace the Warranty Item, in each case as determined by i2Systems in its sole and absolute discretion following receipt and inspection by i2Systems of the Warranty Item. For the avoidance of doubt, "provided a replacement for such Product or defective component or part thereof" expressly does not include any removal or reinstallation costs or expenses, including without limitation labor costs or expenses. All exchanged Warranty Items shall become the property of i2Systems. i2Systems may use either new or remanufactured, reconditioned or refurbished components or parts (if in like-new condition), or functionally equivalent components or parts, in the furnishing of replacement(s) for any Warranty Item. i2Systems' warranty flows only to Buyer of the products. If i2Systems chooses to replace the Product and is not able to do so because it has been discontinued or is not available, i2Systems may replace it with a comparable product.

1.3 Limitations. The foregoing warranty is limited, and does not extend to, and i2Systems shall incur no liability for: (a) lumen maintenance of the Products; (b) color shift of light output of the Products; (c) degradation or discoloration of the Product housing(s); (d) mechanical or cosmetic deterioration of the Products associated with normal wear and tear. For clarity and without limiting the generality of the foregoing, the foregoing warranty does not apply if a Product's light module continuously generates light at any intensity, regardless of whether such intensity has decreased since the date of first use of such Product [(viz., warranty coverage only applies in the event that such light module generates no light or generates light intermittently)]. This limited warranty only applies when the product has been properly wired and installed and operated within the electrical values, operating range and environmental conditions provided in the Specifications. This warranty does not apply to damage or failure to perform arising as a result of any Acts of God or from any abuse, misuse, abnormal use or use in violation of any applicable standard, code, or instructions for use including those contained in the latest National Electrical Code, the Standards for Safety of Underwriters Laboratory, Inc., the Standards for the American National Standards Institute or, in Canada, the Canadian Standards Association. This Warranty shall become void in the event any repairs or alternations not duly authorized by i2Systems in writing are made to the Product by any person.

Buyer shall convey with each Product distributed to end users this LIMITED WARRANTY, and if i2Systems determines that the appropriate remedy for a defective product is refund of Buyer's purchase price, Buyer shall refund to the end user (or arrange for the refund to the end user of) the full purchase price paid by the end user for such defective Product.

With respect to Products sold to the Buyer by i2Systems but not bearing i2Systems' name or sub-brand name, I2SYSTEMS MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, but will make available to the Buyer upon request but only to the extent permitted by law and relevant contracts, the warranties of the manufacturer of the relevant product.

1.4 Exclusions; Buyer Indemnification. The foregoing warranty shall be void with respect to defective conditions or non-conformities of the Products resulting from: (a) modifications of Products not authorized by i2Systems; (b) misuse, neglect, accident or abuse, improper wiring, repairing, splicing, alteration, installation, storage or maintenance; (c) use in a manner not in accordance with i2Systems' published operating specifications or instructions for the applicable Products; (d) Product defects caused by Buyer's combination of the Products with equipment provided or manufactured by third party vendors (unless i2Systems is advised, in writing, of such proposed combination and i2Systems thereafter consents in writing to such combination); (e) breach by Buyer or its employees, partners to whom Buyer sold Product, contractors, representatives, agents or affiliates, (collectively, "Buyer Parties") of any obligation herein; or (f) negligent use, application, installation or implementation of Product by any of the Buyer Parties. Buyer shall indemnify, defend and hold harmless i2Systems and its officers, directors, agents, employees, affiliates, representatives, successors, and assigns from and against all losses, liabilities, costs, and expenses (including, without limitation, attorneys' fees) arising out of or in connection with claims by third parties for any loss, damage, or injury (including death) caused by or alleged to be caused by the circumstances described in this Section 5.4. Buyer shall not join, settle or otherwise attempt to affect or dispose of any such claim without i2Systems' written consent.

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