Gen2™ V2355
Installation Guide
Thank you for purchasing the Gen2™ LED Fixture!
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:

• Gen2 Spec Sheet
• LightLink LL-205 Installation Guide
• Power Box E10PW Datasheet

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Product information is subject to change without notice.
Introduction

Use these instructions to plan, install, and wire your new Gen2 Fixture. Proper installation will ensure this Fixture 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 Fixture, Power Box, and Accessories

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

- **Install the fixture**
  - Use the adjustable or fixed brackets to secure the Fixture to the mounting surface
  - Connect multiple Fixtures in a run, if applicable

- **Wire the fixture**
  - Use the wiring diagram that best describes your installation criteria
**Electrical Warnings**

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

- Read and understand the Fixture installation instructions and safety labels before you begin your installation.
- Turn off the power before installing or servicing the Fixture and/or connecting or disconnecting individual units.
- Follow all national and local electrical and construction codes and regulations.
- Avoid all temptation to disassemble the Fixture because there are no serviceable parts and tampering with it could cause shock.
- Use only Fixtures marked for exterior use in outdoor applications.
- Comply with the maximum voltage rating of the Fixture.
- Operate the Fixture within the specified temperature and environmental ranges.
- Avoid making live connections, also known as hot swapping.

**Fixture Maintenance**

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

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

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

**Certifications**

- UL
- FCC
- RoHS compliant
- IP66
Installation Site Considerations

i2Systems designs its Fixtures 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 Fixture with a simple, inexpensive means of safely accessing the Fixture in the future.

i2Systems Fixtures are not for use in applications that would require scaffolding, swing stages, cranes, or any exotic means of accessing the Fixtures 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 Fixture 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 Fixture has i2Systems’ Active Thermal Management (ATM), which will reduce power and therefore the case temperature if the Fixture overheats. However, you should not rely on the ATM to regulate temperature as part of the normal operation of the Fixture.

Failure to operate the Fixture 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 Fixture by dimming it, decrease the ambient temperature, increase the airflow or volume of air around the Fixture, and/or remove the Fixture and install a lower power Fixture.

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

If you have any questions or concerns about temperature as it relates to the Fixture, call 1.860.567.0708 before you begin the installation process.
Wet Location/Outdoor Use Fixture Labeling

Use only wet location Fixtures for exterior applications.

Fixtures marked with an “I” are intended for indoor use only. They should not be used for exterior applications.

V2355A-23CBB✓ V2355A-23CBB✗

Outdoor Installation Considerations

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

- Fixtures rated for exterior applications are not rated for submersible use. You should not mount the Fixture in a location that has or may have standing water.

- You should never install a Fixture where there is or may be moving water from runoff or downspouts.

It is good practice to seal all Fixtures 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 Fixture in wet or damp locations.

You should also install a loop into the cable at the Fixture end to prevent water from wicking towards the Fixture. 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 Fixture.

Wet Location Connection Considerations

i2Systems designed the Gen2 for use as a continuous run of lights and therefore provides the Fixtures with a convenient Plug-Together feature.

- Make sure all connector plugs are fully seated during the installation process. Failure to do so may result in intermittent connection, corrosion, and/or leaking into the main housing.

- For the last Fixture in any run, use End Plug Model 530-01757 to cap any unused connector. Failure to do so may result in intermittent connection, corrosion, and/or leakage in the main housing.
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 Fixtures 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.

Gen2 Mounting Brackets (Use One Type)

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

VLA-13 Adjustable
Aluminum adjustable mounting bracket with stainless steel screws. 180° of On-Center Rotation.

VLA-9 Fixed
Aluminum mounting bracket with stainless steel screws. Mates with dovetail slots on Gen2.

VLAX1-6
6” Adjustable Bracket

VLAX1-12
12” Adjustable Bracket

Aluminum adjustable mounting bracket designed for extension of the Gen2 Fixture 6 or 12 inches (specify model) from the mounting surface. 180° On-Center Rotation.

Gen2 Specifications

Watts: V2355A: 14 Watts / Foot (HO) V2355B: 7 Watts / Foot (SO)

Input Voltage: 20-30V DC

Operating Temp: -20°C to 40°C

Max Case Temp (Tc): 50°C

Humidity: 0 to 95% Non-Condensing
Power Boxes for the Gen2 (Use One Type)

Depending where you will install the Fixture and how it was specified during the ordering process, you will find one of the following Power Boxes in your product package.

**PS30V280W-E10PW**
120-277V AC Input
Powers up to 20 Feet of Gen2 HO, 40 Feet of Gen2 SO

**PS30V560W-E10PW (Dual Output)**
120-277V AC Input
Dual Output
Powers up to 40 Feet of Gen2 HO (2 runs of 20 Feet) and 80 Feet of Gen2 SO (2 runs of 40 Feet).

Rated for Indoor / Outdoor Use.

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Plug-Together Cables for the Gen2

**Power Input Cables** (Required)
685-01859-6
6 foot power input cable for hard-wire or connection to Power Box.

**Power Extension Cables** (Optional)
1 ft: 685-01670-1
3 ft: 685-01670-3
10 ft: 685-01670-10
Power extension cables with dual plugs.

**End-to-End Connector** (Optional)
720-01868
Connector allows vertical installation and relamping.

**End Plug** (Required)
530-01757
One end plug must be installed in last fixture of each run to properly seal the fixture.
Dimming Components for the Gen2

![LightLink LL-205-10V](image)

**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.

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### 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.

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### Gen2 Baffles (Indoor Only)

![Gen2 Baffles](image)

**Black Finish:**
- 12": 810-02305-12B
- 24": 810-02305-24B
- 36": 810-02305-36B
- 48": 810-02305-48B

**White Finish:**
- 12": 810-02305-12W
- 24": 810-02305-24W
- 36": 810-02305-36W
- 48": 810-02305-48W
Fixtures Installation

Select the bracket appropriate for your installation.

- Use the adjustable bracket VLA-13, to set the angle at which the light washes or grazes over a wall and ensures the ability to change this angle in the future.

- The use of the VLAX1-6 or VLAX1-12 offers similar performance to the VLA-13, however extends the Fixture away from the mounting surface as shown on page 11.

- Use VLA-9 for fixed installations at 90° relative to the mounting surface.

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

Installing VLA-9 Fixed Brackets

Always use two VLA-9 brackets per Fixture, regardless of whether you are creating a standalone installation or combining any number of Fixtures in a continuous run.
Installing Adjustable Brackets

VLA-13 Bracket

End-to-End Plug, model 720-01868 installs through bracket “window”.

Product Installs to bracket via two dovetail strips. Strips slide freely prior to tightening. Be sure to fully tighten during installation.

VLAX1-6 / VLAX1-12 Brackets

For a standalone installation, use two brackets for each Fixture. If you are installing a continuous run of Fixtures, use one bracket per Fixture, until you reach the last Fixture in the run, where you will install two brackets as shown in the diagram above.
Wiring Restrictions

Powering & Plugging Together Fixtures

Always use a minimum of 12 AWG wire between the Power Box and Fixtures.

The maximum power wire distance from the last light to the Power Box is 50 feet for High Output (HO) and 100 feet for Standard Output (SO).

The maximum number of Fixtures that may be plugged together is 20 High Output (HO) and 40 Standard Output (SO).

Never exceed the maximum limits as outlined in this Installation Guide. Doing so may draw excessive current beyond the ratings of the Fixture’s internal wiring and connectors and/or may overload the Power Box.

Dimming

There is no limit to the number of Gen2 Fixtures you can install in one area, however the Dimming Wire distance between the LL-205 and the last connected Power Box should not exceed 1000 feet. Depending on the installation, exceeding this limit may cause flicker and/or reduce dimming performance.

When using 0-10V control for large installations, multiple LightLink LL-205s may be connected to the same 0-10V signal. All Fixtures installed to a single LL-205 will dim together (single zone). All LL-205s installed to a single 0-10V signal, will dim together.

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

### Power Box Considerations

i2Systems offers two Power Box Models:
- **Single Output:** 280 Watts
- **Dual Output:** 560 Watts

When using a Dual Output Power Box, each output operates separately and are not to be tied together to power a single run.

For a successful and smooth installation, be sure to follow the guidelines above and the wiring diagrams on the following pages.
Installation: 100% Intensity, No Dimming

Synchronizing Fixtures

The Gen2 Fixtures are “smart” fixtures that synchronize and start simultaneously when power is applied to one or more Power Boxes. For dimming installations, this feature is enabled automatically. To synchronize multiple Power Boxes without the dimming feature, link the Power Boxes together using i2Systems Dimming Cables and tie all orange wires (Dim+) together and then repeat this step for the violet wires (Dim-). No dimmer is necessary.
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 9 to combine or “daisy-chain” Power Boxes to a single LL-205, making sure you connect the Dimming Cable Drain Wire as shown above.

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.

*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 Gen2 Fixtures from 1% 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 9 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.

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

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

Q: Can I connect the Gen2 directly to line voltage?
A: No. Connecting the Gen2 directly to line voltage or any voltage higher than 30V DC will damage the Fixture and void the warranty. Use E10PW i2Systems Power Box to convert line voltage to the proper voltage.

Q: What are the effects of Voltage Drop on the Gen2?
A: The Gen2's onboard SmartDriver provides 100% intensity over the full range of 20-30VDC. Because of this feature, for longer runs where there will be long power feed cables and/or many fixtures plugged together (refer to pages 12-14 of this guide), the fixture will draw higher current at 20V DC than it does at 30V DC. i2Systems E10PW Power Box provides a 30V output to counter the effects of voltage drop, however excessive voltage drop (beyond that anticipated by our guidelines) will draw additional power from the Power Box and may overload it.

Q: Can I load the Power Box to the full wattage specified (i.e., 280W)?
A: Yes. The power supplies installed in i2Systems Power Boxes are derated (i.e. a 280W Power Box uses a 320W power supply). That considered, the Gen2 regulates for constant power, in which case be sure to follow the installation guidelines found on pages 12-14 to ensure the power supply is not overloaded due to excessive voltage drop. Refer to the Power Box Datasheet for additional details.

Q: Can I use a third party low voltage power supply?
A: No. Any damage or reduced performance caused by a third party power supply will void the Gen2 warranty. Only use i2Systems E10PW Power Box.

Q: For installations without dimming, what do I do with the orange and violet wires on the Gen2?
A: The orange and violet wires on the Gen2 cables are for isolated dimming control. Orange is positive (Dim+) and violet is negative (Dim-). These wires are optically isolated from the Gen2 power and may be cut and capped using best industry practices. Alternatively, tie all orange wires to orange wires and violet wires to violet wires to synchronize light turn-on when power is applied. Refer to the diagram on page 15 of this installation guide.

Q: What is the maximum number of Gen2 Fixtures the LL-205 will dim?
A: There is no limit to the number of Gen2 Fixtures you can install in one area, however the Dimming Wire distance between the LL-205 and the last connected Power Box should not exceed 1000 feet.

Q: When using the LightLink LL-205 Dimming Module, do I need a third party dimmer?
A: No. The LL-205 can also be used as a standalone dimmer. This feature is useful for simple installations and/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 Fixtures 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.

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