



# IntelliPower

Enabling the transition from static conventional lighting to dynamic LED lighting using existing electrical infrastructures

# IntelliPower

## Enabling the transition from static conventional lighting to dynamic LED lighting using existing electrical infrastructures

IntelliPower lets you deploy intelligent, digitally controllable LED lighting solutions in any situation where re-wiring is not desirable or feasible, including historic buildings, in-ground systems, bridges, and monumental exteriors. By leveraging existing electrical and physical infrastructures, IntelliPower lets you affordably install dynamic, digitally controllable LED lighting where it was never possible before.

- Groundbreaking technology — IntelliPower employs an innovative implementation of proven power line carrier technology to send high-bandwidth control data to fixtures over standard 2 + ground wiring.
- High-bandwidth data communication — Unlike low- and mid-bandwidth PLC systems, IntelliPower delivers high-speed, high-bandwidth data communications from any DMX or Ethernet lighting controller, supporting the full range of color-changing lighting effects and dynamic light shows — not just simple switching and digital dimming.
- Leverages existing electrical infrastructures — The Data Enabler IntelliPower distributes digital control data from any DMX or Ethernet controller over existing electrical branches using standard 2 + ground wiring. The Data Receiver IntelliPower translates power and control streams into 3 + ground wiring for delivery to intelligent Powercore LED lighting fixtures from Philips Color Kinetics.
- Flexible configurations — You can install IntelliPower devices in virtually any configuration to support the full range of lighting design needs. You can use multiple Data Receiver IntelliPower devices on a branch to connect individual LED lighting fixtures in situations where you cannot lay new cable. You can configure your system to control fixtures on multiple branches from a single control source.
- Special support for canopy-base and landscape-mount fixtures — Mount canopy-base fixtures from Philips Color Kinetics, including Burst Powercore Architectural and Blast Powercore, directly to the Data Receiver IntelliPower for situations in which you cannot use 3 + ground wiring. The Data Receiver IntelliPower offers a threaded opening for fixtures with mounting posts, such as Burst Powercore Landscape.
- Outdoor rated — IntelliPower devices are fully sealed and IP66-rated for outdoor applications.
- Support for evaluating site readiness, troubleshooting, and commissioning — The Site Assessment Tool tests data signal quality for pre-installation qualification and post-installation troubleshooting. An on-board system test button helps ensure that connected fixtures are properly wired and receiving control data.
- Universal power input range — IntelliPower devices accept a universal power input range of 100 – 277 VAC for consistent installation and usage anywhere in the world.



### Minimizing labor, materials, and installation costs

IntelliPower enables the integration of intelligent Powercore LED lighting fixtures into existing electrical infrastructures. Together, IntelliPower and Powercore dramatically simplify installation and lower labor and materials costs for installation and commissioning.

## What Is IntelliPower?

IntelliPower lets you deploy intelligent, digitally controllable LED lighting solutions where they were never possible before, both indoors and outdoors. For retrofits, IntelliPower lets you use the electrical infrastructures already installed in historic buildings, in-ground lighting systems, bridges, and other existing structures, letting you realize all the benefits of a state-of-the-art LED lighting system without having to undertake expensive rewiring, renovation, or excavation work. IntelliPower also lets you extend electrical and data runs to deploy intelligent LED lighting solutions on building exteriors, bridges, and any other situation where access to data and mains power sources is difficult, or where they must be located at a distance from lighting fixtures.

IntelliPower is a groundbreaking implementation of proven power line carrier (PLC) technology, a system for carrying data on the same conductors used for transmitting electrical power. PLC technology has been used successfully for years in applications such as home automation, home networking, and remote monitoring and control of meters and other electrical equipment for utilities.

IntelliPower applies the principles of PLC technology to intelligent LED lighting systems. With IntelliPower, you can install and digitally control intelligent Powercore fixtures from Philips Color Kinetics using existing electrical branches, 2 + ground wiring, and lighting fixture mounting points, making dynamic LED lighting retrofits possible where rewiring is prohibited, problematic, or too expensive. IntelliPower can also reduce installation expenses for labor, materials, time, and rental equipment,

lowering overall initial costs and bringing LED lighting retrofits within budget.

Unlike the low- and mid-bandwidth PLC systems used in many home and utility-side applications, IntelliPower enables high-bandwidth DMX and Ethernet data communications over conventional 2 + ground wiring. High-bandwidth IntelliPower communications support the full range of color-changing lighting effects, dynamic light shows, and video — not just simple switching and digital dimming.



### **Belfast City Hall Belfast, Northern Ireland**

With IntelliPower, the Belfast City Council was able to affordably install an intelligent, color-changing LED lighting system on the historic 1906 Belfast City Hall façade without the expense and potential hazards of rewiring.

## IntelliPower and Powercore

IntelliPower allows you to realize all the benefits of intelligent Powercore LED lighting systems where it was never possible before. IntelliPower and patented Powercore technology work together to help you achieve unprecedented results.

An advanced power management system patented by Philips Color Kinetics, Powercore delivers power input directly to fixtures from line voltage over standard 3 + ground wiring.

Powercore simplifies installation and lowers system costs by eliminating external power supplies, separate data cabling, and special installation methods. Powercore also lowers the cost of installation and maintenance by reducing a system's total parts count, minimizing the size and weight of the power management components required to run a lighting system, and extending fixture and cable runs.

By allowing you to install intelligent Powercore fixtures using existing 2 + ground wiring and mounting points, IntelliPower lowers installation and total system costs even more. Depending on the details and requirements of the installation, you can use IntelliPower to replace existing conventional lights with dynamic LED lighting fixtures, extend an existing lighting system with runs of intelligent Powercore fixtures, or integrate intelligent lighting with building automation systems. You can use these approaches in any combination in a single installation.



Photography: Robert Sansone

### **Powercore and IntelliPower, working together**

On the north side of Boston, Massachusetts, the Leonard P. Zakim Bunker Hill Bridge is one of the widest cable-stayed bridges in the world. In 2013, the Massachusetts Department of Transportation (MassDOT) installed an IntelliPower solution to replace the existing metal halide fixtures with intelligent Powercore floodlights from Philips Color Kinetics. Now MassDOT can digitally control the lights to instantly change colors and to display color-changing light shows while reducing energy consumption by more than 80% over the previously installed conventional lighting system. IntelliPower also allowed MassDOT to re-use the existing electrical wiring and fixture mounting points on the bridge, dramatically lowering installation costs.

## When to Use IntelliPower

Like any advanced solution, IntelliPower is appropriate in many, but not all, circumstances. In some cases, a standard Powercore or low-voltage solution may be more cost-effective than an IntelliPower solution. For any given lighting project, you must evaluate a number of factors, including the state of existing electrical and physical infrastructures, the cost and complexity of installing new wiring, restrictions due to local electrical or historic preservation codes, or similar considerations. Where initial cost is the determining factor, TCO and ROI comparisons between IntelliPower solutions and alternatives are crucial. To determine whether IntelliPower is the right solution for your lighting project, contact a Philips Color Kinetics sales representative.

Photography: Courtesy of LED Source



Consider using IntelliPower for flexible, cost-effective solutions in the following situations:

- IntelliPower offers the ability to replace static conventional lighting with dynamic LED lighting in buildings and structures where replacing existing 2 + ground wiring is prohibited or too costly — for example, in historic buildings or in-ground exterior lighting systems. Using IntelliPower devices with fixtures from Philips Color Kinetics, you can install intelligent LED lighting fixtures in place of existing conventional lighting fixtures without running any new 3 + ground wiring or additional 2 + ground wiring.
- Even where conduit is already installed, pulling new 3 + ground wiring can be cost-prohibitive. In such cases, or in any situation where installation costs for new LED lighting systems are too high, an IntelliPower solution may be able to reduce overall installation costs to bring a project within budget.
- IntelliPower can lower the cost of enhancing and extending installed lighting systems in existing buildings. For example, IntelliPower may allow you to use a building's existing electrical infrastructure (2 + ground) to deliver combined power and data to an installation of new intelligent LED lighting fixtures (3 + ground) on the building's façade.

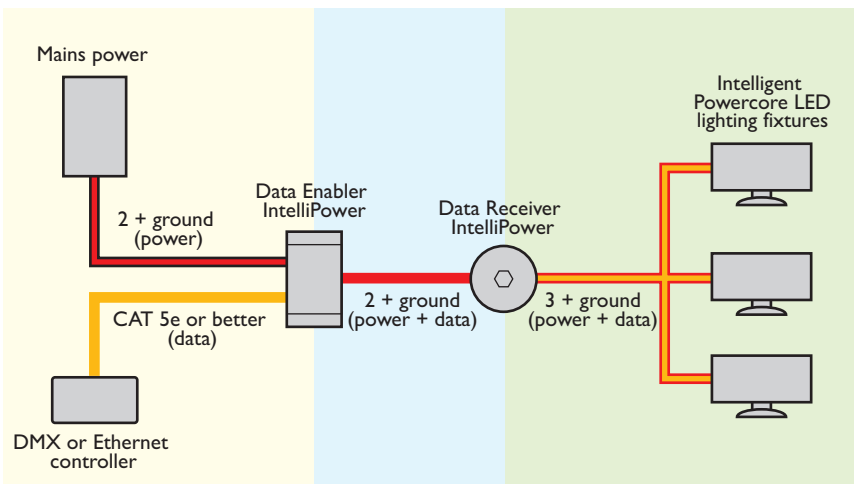


Photography: www.peterwongphotography.com

- You can use IntelliPower as a powerful new tool in your lighting toolbox to make a variety of projects possible. For example, you may be able to use IntelliPower devices to extend your lighting data network in circumstances where intelligent LED lighting fixtures must be installed at a distance from a data source. An IntelliPower solution may allow you to integrate intelligent LED lighting systems with conventional lighting systems, building automation systems, or occupancy sensors and daylight harvesting systems.

## The Components of an IntelliPower System

In a typical IntelliPower system, you install two types of IntelliPower devices — the Data Enabler IntelliPower and the Data Receiver IntelliPower — into an existing electrical branch, connect a DMX or Ethernet lighting controller to the system, and install intelligent Powercore LED lighting fixtures from Philips Color Kinetics. LED lighting fixtures can be installed in virtually any configuration, up to the limits imposed by the electrical circuit and data signal integrity.



**Data Enabler IntelliPower**

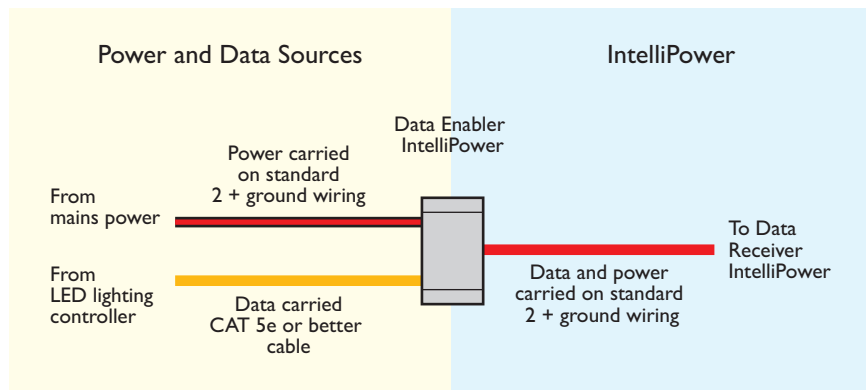


**Data Receiver IntelliPower**

You can install selected intelligent Powercore fixtures directly to a Data Receiver IntelliPower device, or you can use a Data Receiver IntelliPower device as a junction point to begin new runs of Powercore fixtures using 3 + ground wiring. You can combine both techniques in an installation however you wish. Refer to “The Components of an IntelliPower System” below for additional details.

### Data Enabler IntelliPower

The Data Enabler IntelliPower accepts standard 2 + ground mains power from an electrical panel and control data from a DMX or Ethernet lighting controller, merges the power and data streams, and outputs the combined power / data stream over standard 2 + ground wiring.



**Data Enabler IntelliPower combines power and data and outputs them to Data Receiver IntelliPower over standard 2 + ground wiring.**

### DMX and Ethernet Lighting Controllers

You can use any DMX or Ethernet controller from Philips Color Kinetics with IntelliPower systems, as well as third-party DMX controllers and third-party Ethernet controllers that support KiNET, the Ethernet lighting protocol from Philips Color Kinetics. You connect controllers to the Data Enabler IntelliPower using standard CAT 5e or better cables.



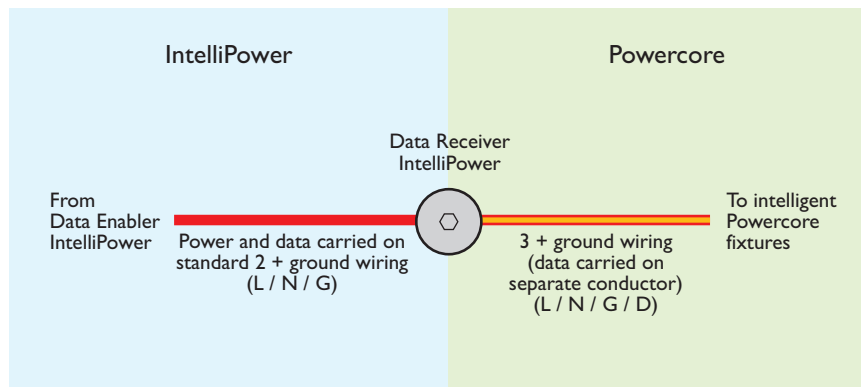
**iPlayer 3  
DMX Controller**



**Light System Manager  
Ethernet Controller**

### Data Receiver IntelliPower

The Data Receiver IntelliPower accepts the combined 2 + ground power / data stream from a Data Enabler IntelliPower and translates it into a 3 + ground scheme (line, neutral, ground, and data) in order to output it to intelligent Powercore LED lighting fixtures from Philips Color Kinetics.



**Data Receiver IntelliPower receives the combined power / data stream from Data Enabler IntelliPower and delivers it to intelligent Powercore fixtures.**

## Intelligent Powercore LED Lighting Fixtures

IntelliPower works with all intelligent Powercore LED lighting fixtures from Philips Color Kinetics:

- IntelliColor fixtures combine three or more channels of colored LED sources to natively produce millions of colors of light.
- IntelliWhite fixtures combine two or more channels of white-light LED sources to produce a range of color temperatures.
- IntelliHue fixtures combine multiple channels of colored and white-light LED sources to produce color-changing effects and high-quality white light from the same fixture.

Intelligent Powercore LED lighting fixtures install in a number of different ways, depending on what type of connections they have — for example, detachable pre-configured leader cables, or integrated 4-conductor power / data cables with flying leads. Selected fixtures can be top-mounted directly to Data Receiver IntelliPower devices in situations where you want to reuse existing fixture mounting points and avoid running 3 + ground wiring entirely.

See “Planning an IntelliPower System” beginning on page 10 for details and guidance on using and combining different fixture installation methods.



Floodlighting



Wall Washing



Spotlighting



Direct View Lighting



Wall Grazing



Cove Lighting

**Intelligent Powercore LED lighting fixtures from Philips Color Kinetics support a wide range of lighting applications**

## Assessing Site Readiness

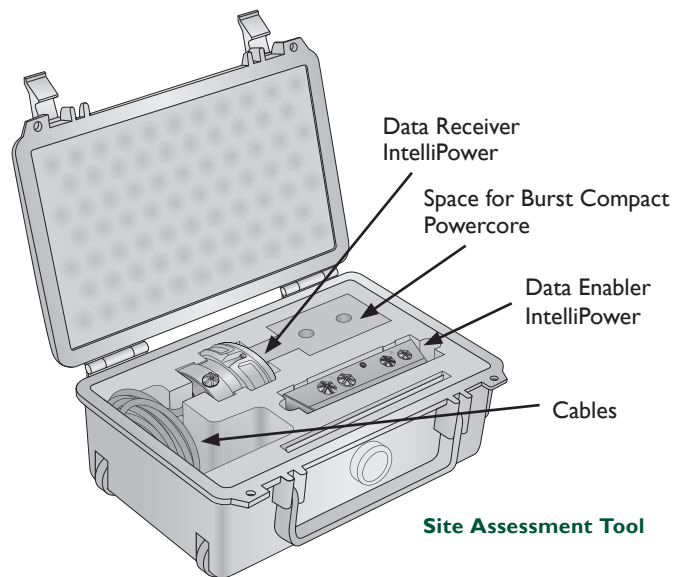
As with any professional lighting project, assessing and planning an IntelliPower solution requires the lighting designer or specifier to collaborate with professionals in related areas of responsibility. Depending on the complexity of the solution and the level of integration with other systems, the assessment and planning team may include architects, structural engineers, electricians or electrical contractors, systems integrators, building or plant managers, programmers, light show designers, and others.

If your IntelliPower project makes use of existing physical and electrical infrastructures, system planning and assessment differs somewhat from system planning and assessment for new construction, or for system extensions where you're running new electrical cable and installing new mounting points and other lighting-related hardware. When retrofitting existing buildings and structures, the condition and suitability of the installation site is a critical factor in determining the feasibility of an IntelliPower solution. Lighting designers and specifiers may need to collaborate closely with engineers, electricians, and building managers to evaluate the layout and condition of electrical systems, and to identify potential barriers to successful installation and commissioning.

The IntelliPower Site Assessment Tool (SAT) helps in the process of evaluating the suitability of an existing site prior to the sale and installation of an IntelliPower solution. The SAT is a combined hardware / software kit for testing the integrity and reliability of lighting control data over 2 + ground electrical branches. You install a Data Enabler IntelliPower, a Data Receiver IntelliPower, and a ColorBurst Compact Powercore Architectural fixture on an electrical branch, then use the SAT software



to send test lighting control data through the system. The software monitors the data stream, logs information on the performance of the data transmission, and displays a pass / fail notification when the test completes. The log file captures the percentage of dropped packets and other information that can be used for troubleshooting when necessary.

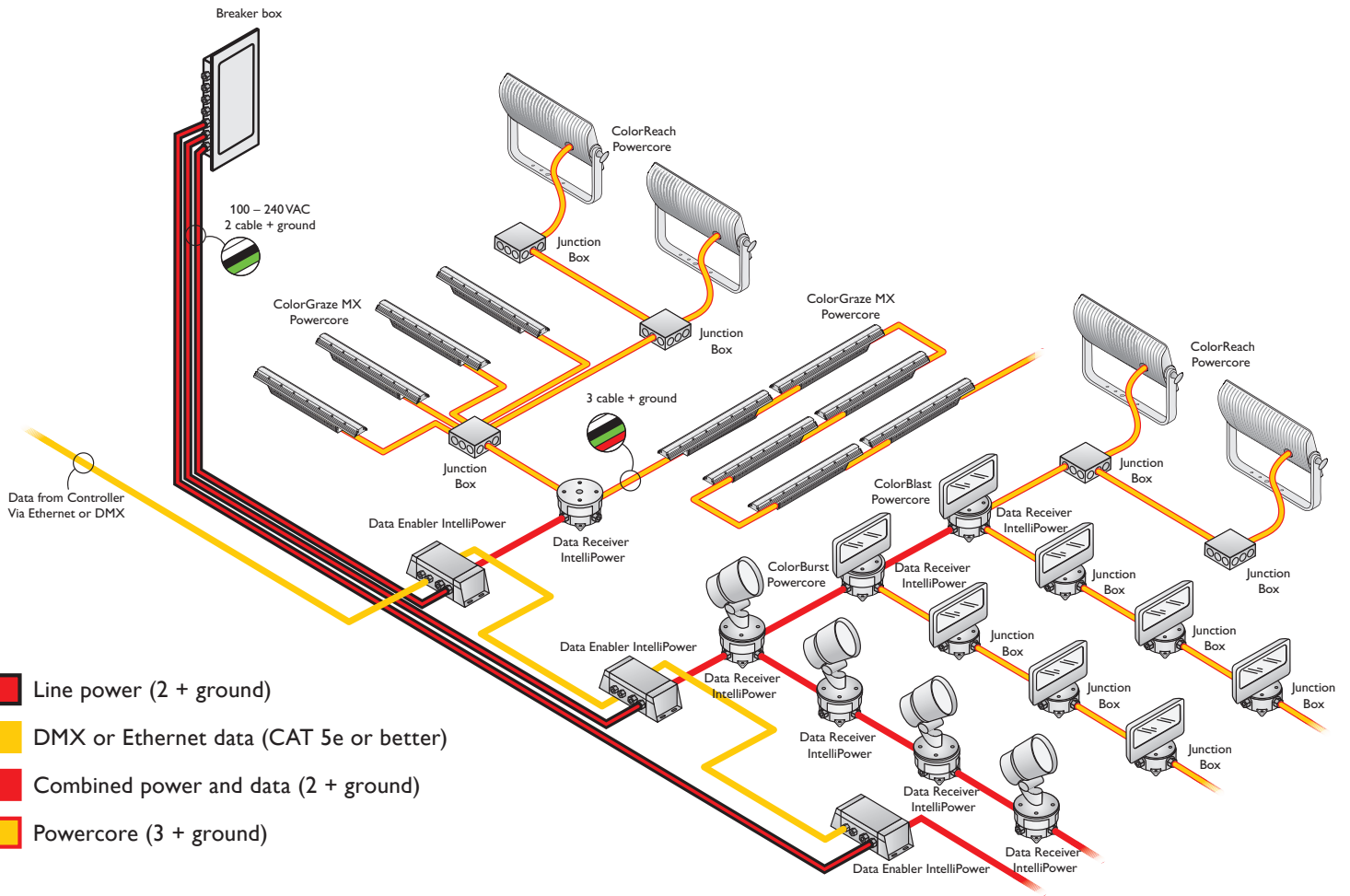


**Site Assessment Tool**

The SAT can help to identify sources of electromagnetic interference (EMI) — such as HVAC systems in office buildings, or blenders and other appliances in restaurants and bars — that may disrupt the IntelliPower data stream. Since there are distance limitations for both power and data, the SAT can also help to identify hidden run lengths in the existing 2 + ground wiring. Such information can be critical for determining maximum overall distances from power sources to runs of fixtures, and for determining the appropriate locations of Data Enabler IntelliPower and Data Receiver IntelliPower devices before installation.

Site assessments should be performed by trained Philips Color Kinetics Applications Engineers, systems integrators, sales representatives, or other qualified professionals. Successful site assessments, along with supplementary site drawings and photography, are required to ensure that potential installation sites have the proper electrical and physical infrastructures to support IntelliPower systems, and that installation and lighting design plans take the unique features of the site into account.

Refer to “Planning an IntelliPower System” beginning on page 10 for notes on power and data run lengths, best practices, and other up-front considerations.



## Planning an IntelliPower System

Because IntelliPower systems can vary widely in scope and complexity, layout and installation details are determined by the objectives of the specific solution and the characteristics of the site's electrical and physical infrastructures. All IntelliPower projects require upfront planning and site assessment for configuring, positioning, and mounting IntelliPower devices, fixtures, controllers, and other system components.

IntelliPower installations typically involve these main steps:

- Evaluate site readiness by performing a site assessment test and collecting site drawings, photography, and other supplementary information
- Identify electrical branches to be used in the installation, and plan locations of Data Enabler IntelliPower devices and controllers
- Plan the usage and locations of Data Receiver IntelliPower devices
- Plan the data network, and identify the locations of controllers, switches, and other required devices
- Create a lighting design plan that identifies the locations of all IntelliPower devices, controllers, and intelligent Powercore LED lighting fixtures
- Collect necessary tools and equipment (mounting hardware, a sufficient length of 2 + ground or 3 + ground wire, leader cables and jumper cables, and so on)
- Install and configure IntelliPower devices, lighting fixtures, and controllers
- Test the system

Philips Color Kinetics offers a number of tools and applications for installation planning, configuration, and commissioning, including the IntelliPower Site Assessment Tool, Configuration Calculator, and QuickPlay Pro. Instructions on using these tools for IntelliPower installations appear later in this Product Guide. Use the information in this section as a guideline for planning and laying out an IntelliPower system.

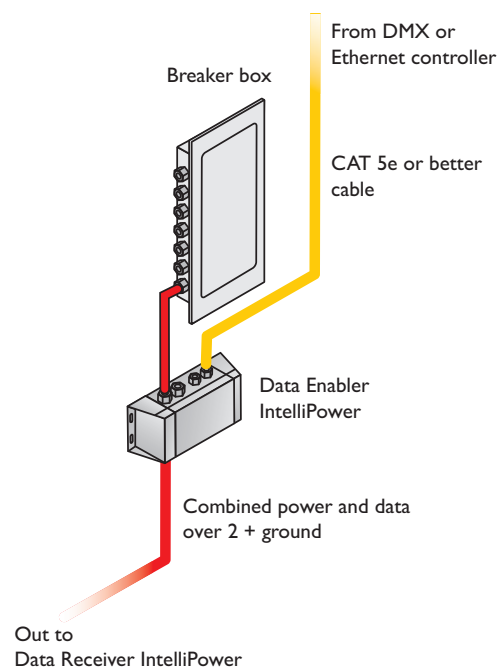
### Data Enabler IntelliPower Considerations

Data Enabler IntelliPower devices receive mains power over standard 2 + ground cable, and DMX or Ethernet control data over standard CAT 5e or better cable. Except in special circumstances, you install one Data Enabler IntelliPower device per electrical branch.

Data Enabler IntelliPower outputs combined power and control data over standard 2 + ground cable. In typical installations, one or more Data Receiver IntelliPower devices are installed on the same electrical branch. Data Enabler IntelliPower devices also offer DMX and Ethernet data outputs, which allow you to connect multiple Data Enabler IntelliPower devices to a single control source using standard CAT 5e or better cable.

Because most intelligent LED lighting fixtures from Philips Color Kinetics accept DMX control data, Data Enabler IntelliPower automatically translates Ethernet data and outputs it in the appropriate data format.

The distance from the electrical panel to the Data Enabler IntelliPower device on a branch has no effect on the performance of the system. However, we recommend that you install Data Enabler IntelliPower devices near the electrical or breaker panel to create an easy access point and to keep the installation clean. We also recommend that you install your DMX or Ethernet controller, Ethernet switches, and any required equipment in the same accessible location to simplify programming, system maintenance and modifications, and troubleshooting.



Data Enabler IntelliPower devices can be mounted directly to any flat surface or substrate. Data Enabler IntelliPower devices must be installed in a location that allows air to move freely around the device. Startup and operating temperatures are rated to 122° F (50° C). Exceeding this temperature limit may cause device damage or failure.

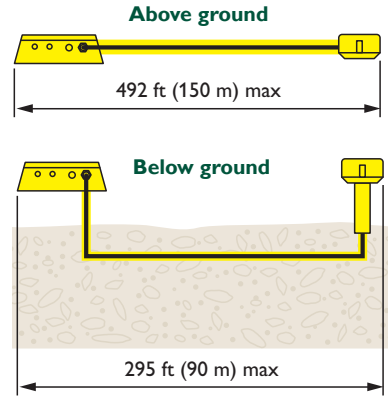
### Data Receiver IntelliPower Considerations

Data Receiver IntelliPower devices receive combined power and data from Data Enabler IntelliPower over standard 2 + ground cable, and outputs power and data to intelligent Powercore fixtures over standard 3 + ground cable. You can install as many as 63 Data Receiver IntelliPower devices per electrical branch, up to the limits imposed by data integrity and the capacity of the electrical circuit.

To ensure data integrity, maximum 2 + ground run lengths from a Data Enabler IntelliPower device to the last Data Receiver IntelliPower device on a branch is 150 m (about 492 ft) above ground, and 90 m (about 295 ft) in-ground. Bear in mind that maximum in-ground run lengths can vary depending on the depth and condition of the cable, and other considerations.

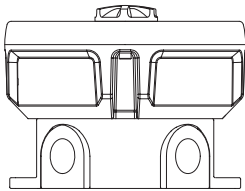
Data Receiver IntelliPower devices install to junction boxes. In North America, you can use standard 4 in round US electrical junction box per fixture, rated for your application, with 3.5 in center-to-center screw holes. Outside of North America, you can install Data Receiver IntelliPower devices to the outdoor-rated Wiring Compartment from Philips Color Kinetics (included with CE versions of Data Receiver IntelliPower).

Because it has a slightly larger capacity than a standard 4 in round junction box, you can also use the Wiring Compartment in North America for increased wiring volume. In some circumstances, the Wiring Compartment may allow you to make additional connections to each Data Receiver IntelliPower device.



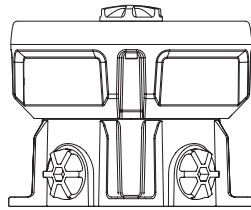
**Maximum 2 + ground run lengths to last Data Receiver IntelliPower device in series**

Total wiring volume: approx. 23 cu in (varies depending on junction box used)



Example standard US 4 in round junction box

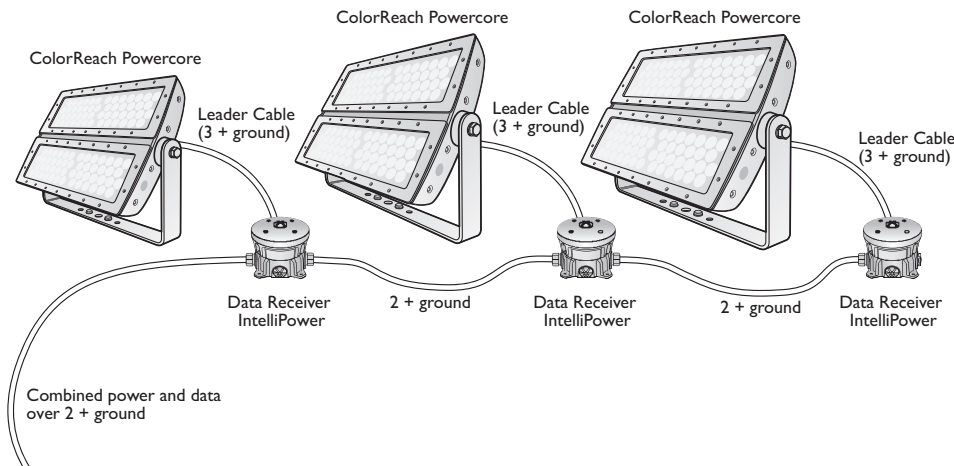
Total wiring volume: 27 cu in



Philips Color Kinetics Wiring Compartment

You can install Data Receiver IntelliPower and intelligent Powercore fixtures in a variety of configurations to support virtually any lighting design plan or system requirement. In general, there are three main approaches to installing Data Receiver IntelliPower devices and attaching intelligent Powercore fixtures to them.

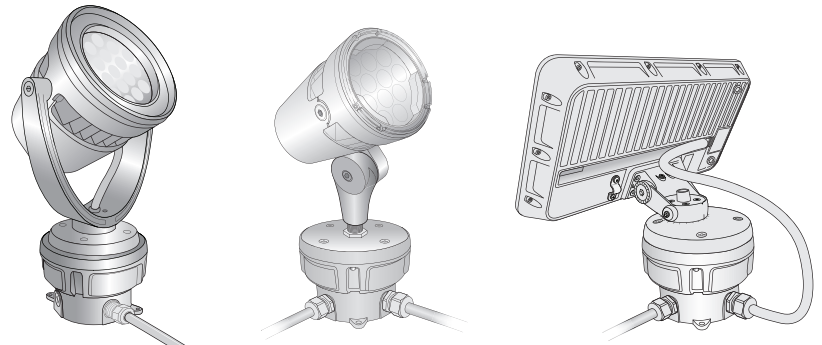
- You can install one Data Receiver IntelliPower device per intelligent Powercore fixture. This layout is appropriate for situations in which you want to install non-linear LED lighting fixtures to existing mounting points while minimizing the need for new 3 + ground wiring.



## Top-Mount Fixtures

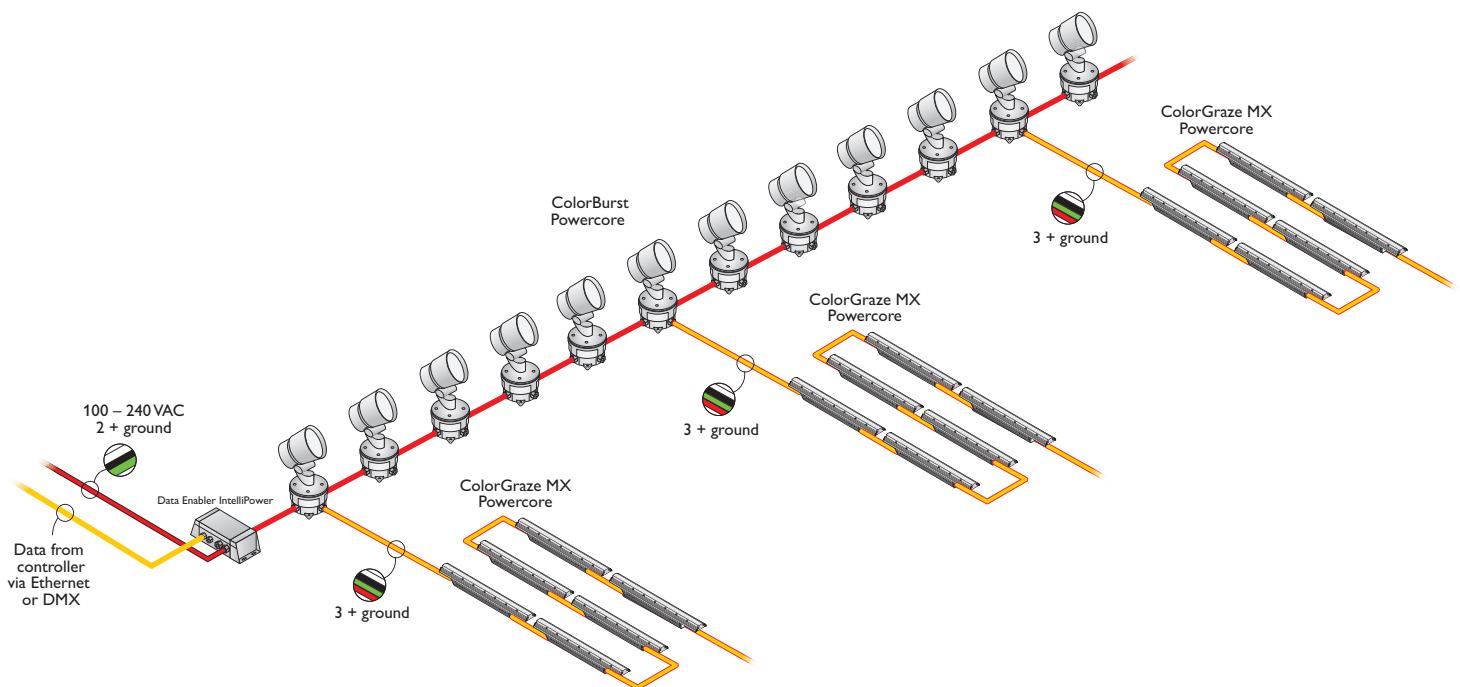
Canopy Base
ColorBurst Powercore Architectural
ColorBurst Compact Powercore Architectural
iW Burst Powercore Architectural
iW Burst Compact Powercore Architectural
ColorBlast Powercore
iW Blast Powercore
Threaded Post
ColorBurst Powercore Landscape
ColorBurst Compact Powercore Landscape
iW Burst Powercore Landscape
iW Burst Compact Powercore Landscape

- Certain intelligent Powercore fixtures with canopy bases or threaded mounting posts can be top-mounted directly to Data Receiver IntelliPower devices. This approach allows you to eliminate the need to run new 3 + ground wiring altogether, since all connections are made inside the Data Receiver IntelliPower wiring compartment. The table to the left lists the intelligent LED lighting fixtures that can be top-mounted to Data Receiver IntelliPower devices.



- You can install a run of intelligent Powercore fixture from a Data Receiver IntelliPower. This layout is appropriate for situations in which you want to install linear LED lighting fixtures that interconnect by means of end-to-end connectors or jumper cables, or where you prefer to run new 3 + ground wiring — for instance, if you're installing intelligent LED lighting fixtures in a area of a building that was previously unlit.

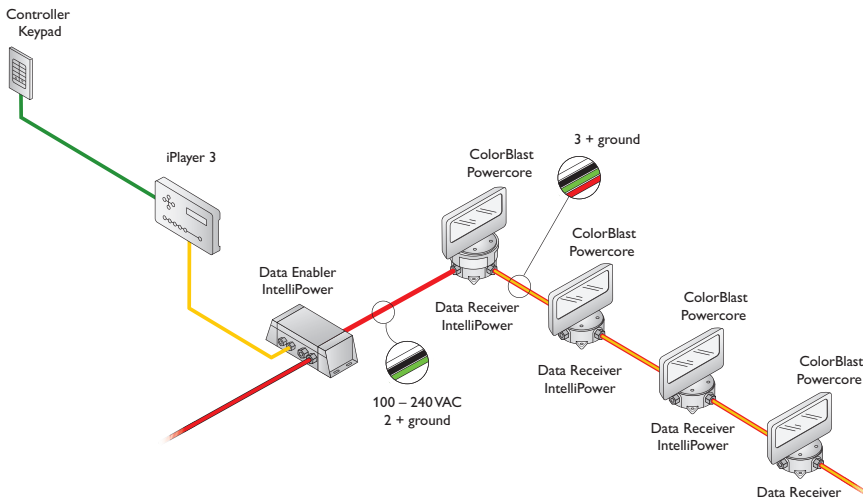
You can use these approaches in any combination to satisfy your specific lighting and system plan requirements. For instance, you can top-mount ColorBurst Powercore Architectural fixtures to a run of 15 Data Receiver IntelliPower devices installed in series, and use every fifth Data Receiver IntelliPower device as the starting point for runs of ColorGraze Powercore or ColorReach Powercore fixtures.



## Data Configuration Guidelines

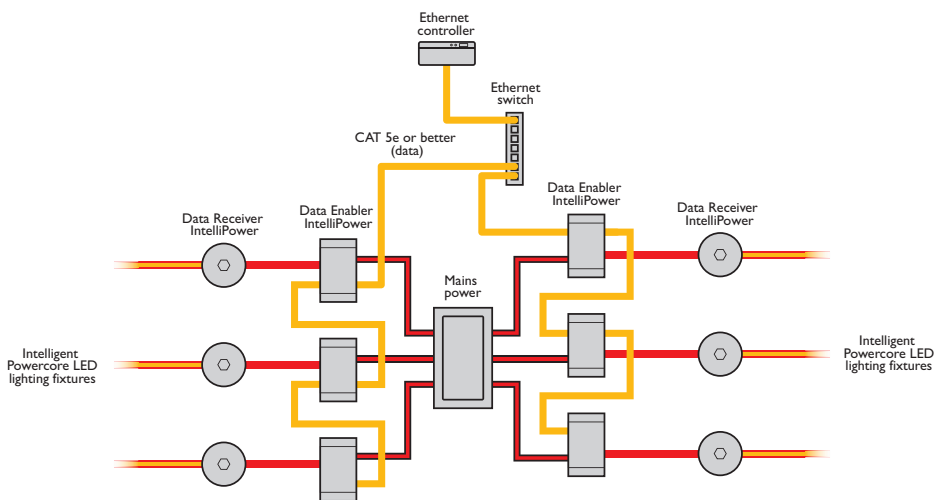
Data Enabler IntelliPower devices can receive either DMX or Ethernet data from a Philips Color Kinetics or compatible third-party controller. DMX is appropriate for relatively simple installations, or for installations in which groups of lights operate in unison — for example, for accent lighting, perimeter lighting, or cove lighting applications.

Typical DMX installations with intelligent Powercore fixtures from Philips Color Kinetics use a controller such as iPlayer 3, a Controller Keypad for turning the lighting system on and off and for triggering light shows, one or more Data Enabler IntelliPower devices, and one or more Data Receiver IntelliPower devices.




Because it is not subject to DMX addressing limitations, Ethernet is the preferred environment for intricate large-scale light shows and video displays, which require large numbers of unique addresses.

Typical Ethernet installations with intelligent Powercore fixtures use an Ethernet switch, an Ethernet controller such as Light System Manager or Video System Manager Pro, Ethernet Controller Keypads for push-button light show triggering, one or more Data Enabler IntelliPower devices, and one or more Data Receiver IntelliPower devices.



Typical IntelliPower network layout using an Ethernet control source

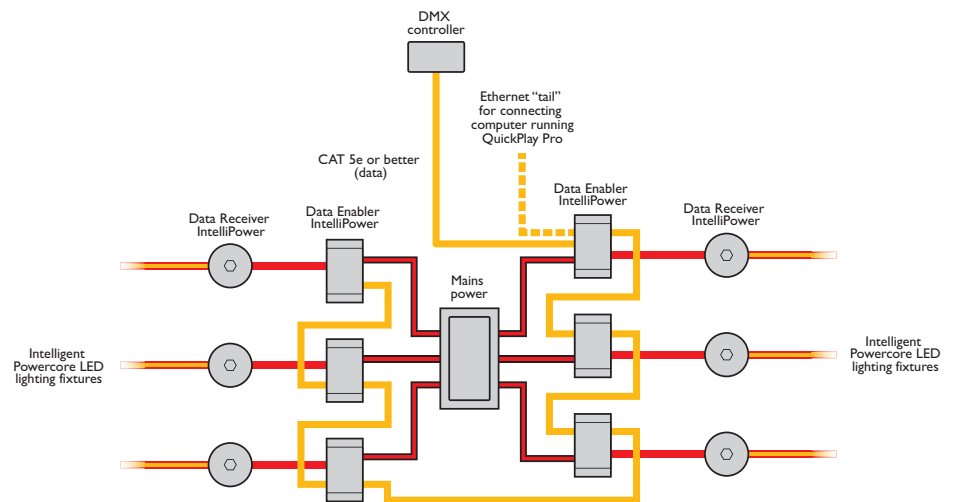
 Data Enabler IntelliPower devices automatically translate from DMX to Ethernet and back again as needed.

You can connect up to 15 Data Enabler IntelliPower devices in series to control lights on multiple electrical branches from a single control source. In typical installations, you connect a DMX or Ethernet controller to the first Data Enabler IntelliPower device in a series using the DMX Data In or Ethernet Data In port, then connect additional devices in the series using the Ethernet Data Out and Ethernet Data In ports.

We recommend using the Ethernet ports to connect Data Enabler IntelliPower devices in series even if you're using a DMX controller, as two-way Ethernet communications offer significant advantages for configuring, commissioning, maintaining, and troubleshooting the IntelliPower network.

In Ethernet networks, you can connect multiple runs of Data Enabler IntelliPower devices to the same control source simply by using additional Ethernet switch ports. In DMX networks, you can use a DMX optical isolator (splitter), although we recommend using Ethernet for large or complex configurations.

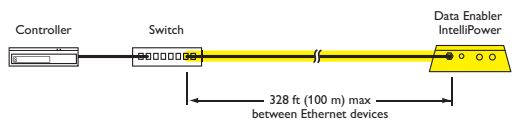
You use QuickPlay Pro addressing and configuration software to manage IntelliPower



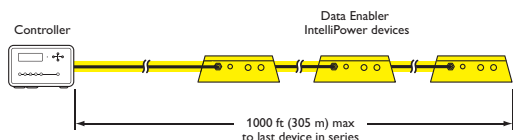
**Typical IntelliPower network layout using a DMX control source**

devices installed in your lighting network. In Ethernet environments, you connect a computer running QuickPlay Pro to the lighting network's Ethernet switch to discover, configure, troubleshoot, and test IntelliPower devices installed across multiple electrical branches. In DMX environments, we recommend that you connect an Ethernet "tail" to the first Data Enabler IntelliPower device in the series so that you can connect a computer to the lighting network without having to remove the Data Enabler IntelliPower cover.

When planning your system, make sure you keep the maximum data cable lengths in mind for Ethernet and DMX environments:



**Ethernet maximum data cable length**



**DMX maximum data run length**

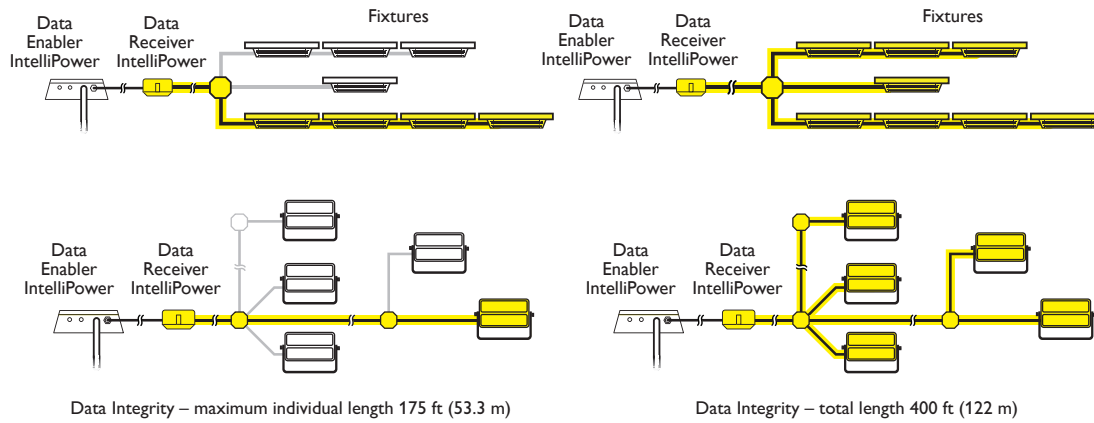
- The maximum data cable length between Ethernet devices is 328 ft (100 m) without a repeater (for example, switch to controller, controller to Data Enabler IntelliPower device, or Data Enabler IntelliPower device to Data Enabler IntelliPower device). Because of Ethernet limitations, the maximum number of Data Enabler IntelliPower devices that can be connected together in series is 15. For additional Data Enabler IntelliPower devices in the same data network, use additional Ethernet switch ports.
- In DMX networks, maximum data run lengths are 1000 ft (305 m) from the controller to the last Data Enabler IntelliPower device in series. The maximum number of Data Enabler IntelliPower devices that can be connected in series is 32. We recommend using DMX repeaters for data run lengths that exceed the maximum length, as well as for runs of more than 32 Data Enabler IntelliPower devices connected in series.

## Fixture Configuration and Installation Guidelines

You can use Data Receiver IntelliPower devices as the starting points for runs of linear intelligent Powercore fixtures (such as iColor Cove MX Powercore and iW Graze MX Powercore) or runs of intelligent Powercore floodlights, wash lights, and spotlights (such as ColorReach Powercore and ColorBlast Powercore).

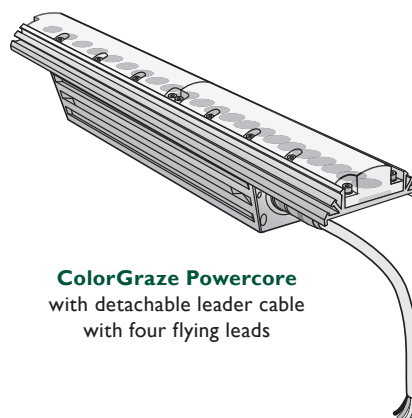
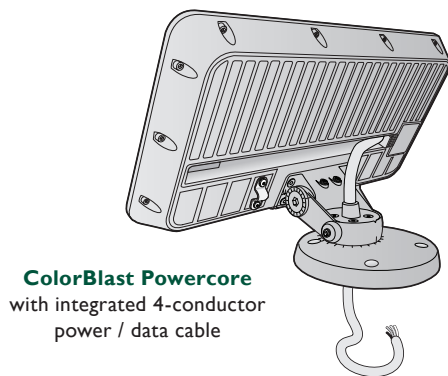
The number of fixtures each Data Receiver IntelliPower can support electrically depends on the fixture type and method of connection, as well as on additional configuration details such as fixture spacing, circuit size, wire gauge, and line voltage.

To ensure data integrity, maximum individual fixture run lengths from a Data Receiver IntelliPower device should not exceed 175 feet (53.3 m), and the total cable length per Data Receiver IntelliPower should not exceed 400 feet (122 m).



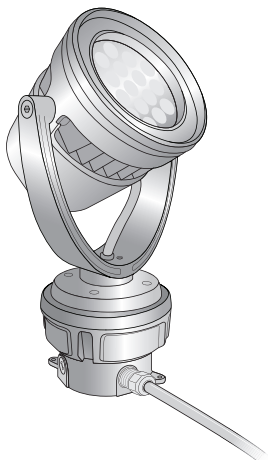
Philips Color Kinetics offers a Configuration Calculator to help calculate the number of fixtures each electrical branch in an IntelliPower installation can support. You can download the Configuration Calculator from [www.philipscolorkinetics.com/support/install\\_tool/](http://www.philipscolorkinetics.com/support/install_tool/). For further help, please consult Application Engineering Services at [support@colorkinetics.com](mailto:support@colorkinetics.com).

Intelligent Powercore LED lighting fixtures either have a detachable leader cable with four flying leads, or an integrated 3 + ground power / data cable. Fixtures with detachable leader cables, such as ColorGraze QLX Powercore and iW Fuse Powercore, can be installed in runs by connecting the leader cable to a Data Receiver IntelliPower, then connecting the fixtures in the run with integrated end-to-end connectors or 3 + ground jumper cables.





Fixtures with integrated power / data cables are installed to junction boxes. You can install a run of fixtures from a single Data Receiver IntelliPower by running 3 + ground wire from the Data Receiver IntelliPower to the first junction box in a run, then between each subsequent junction box in the run. You can also install a run of such fixtures using a Data Receiver IntelliPower device for each fixture. This technique allows you to re-use existing mounting points, minimizing the need for new 3 + ground wiring.



**ColorBurst Powercore  
Architectural**  
top-mounted to a Data Receiver  
IntelliPower device



**IntelliPower Wiring  
Compartment**

You can use Data Receiver IntelliPower devices to eliminate the need for 3 + ground wiring altogether. Burst Powercore Architectural and Blast Powercore fixtures, which feature canopy bases, and Burst Powercore Landscape fixtures, which feature a threaded post, can be installed directly to the top of a Data Receiver IntelliPower device. All 3 + ground connections are made inside the Data Receiver IntelliPower wiring compartment. In this configuration, you can swap existing conventional lighting fixtures for new intelligent LED lighting fixtures using existing mounting points and wiring.

You can use any or all of these techniques in any combination in a single installation, up to the limits imposed by the electrical circuit, data signal integrity, wiring compartment volume, and relevant electrical codes. For example, you can mount Burst Powercore fixtures directly to a series of Data Receiver IntelliPower devices while simultaneously using each Data Receiver IntelliPower to begin a run of fixtures using 3 + ground wiring.

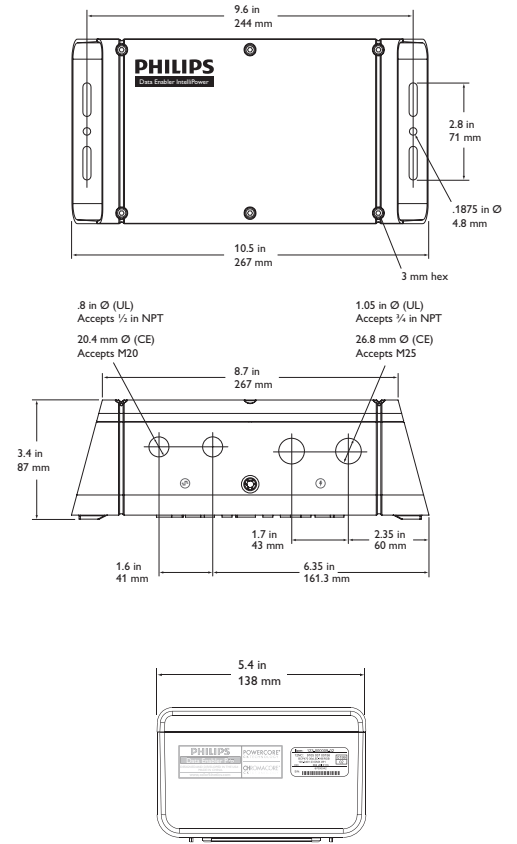
The Data Enabler IntelliPower data inputs and outputs allow you to connect devices on multiple electrical branches to a DMX or Ethernet lighting controller for a single point of control, and to support special configurations, including integration with third-party LED lighting fixtures and other digital control and building automation systems.

Philips Color Kinetics offers an outdoor-rated Wiring Compartment designed to make a watertight seal with the Data Receiver IntelliPower. You can use the Wiring Compartment outside of North America, where standard U.S. 4 in round junction boxes may not be available. You can also use the Wiring Compartment in place of a standard U.S. 4 in round junction box for increased wiring volume. In some circumstances, the Wiring Compartment may allow you to make additional connections to each Data Receiver IntelliPower device.

# Data Enabler IntelliPower Specifications

Due to continuous improvements and innovations, specifications may change without notice.

Item	Specification	Details
Electrical	Input Voltage	100 – 277 VAC*, auto-ranging, 50 / 60 Hz
	Maximum Input Current	150 mA maximum
	Power Consumption	15 W maximum
	Load Current	16 A maximum
Connections	Power Input	3-wire PC terminal block connector†
	Power / Data Output	4-wire PC terminal block connector (supports 3-wire IntelliPower output)† 4-wire IDC terminal block connector (eW Accent MX Powercore and iColor Accent MX Powercore only)‡
	DMX Input / Output	Double-pair, double-entry IDC connectors‡
	Ethernet Input / Output	Double-pair, double-entry IDC connectors‡
Physical	Dimensions (Height x Width x Depth)	3.4 x 10.5 x 5.4 in (87 x 267 x 138 mm)
	Weight	5.4 lb (2.4 kg)
	Construction	NEMA 4X-rated cast aluminum enclosure with slots for surface mounting
	Finish	Powder-coated industrial gray matte
	Threaded Openings	3/4 in NPT for power / 1/2 in NPT for data (US trade) M25 for power / M20 for data (metric)
	Temperature Ranges	-40° – 122° F (-40° – 50° C) Operating -20° – 122° F (-20° – 50° C) Startup -40° – 176° F (-40° – 80° C) Storage
	Humidity	0 – 95%, non-condensing
	Cooling	Convection
	Heat Dissipation	15 W
	Data Input Source	Philips full range of controllers, third-party DMX controllers, or KiNET-compatible§ third-party Ethernet controllers
Certification and Safety	Certification	UL / cUL, FCC Class A, CE
	Environment	Dry / Damp / Wet Location, IP66



\* Verify that the line voltage is appropriate for the lighting fixtures in your installation. See a specific fixture's documentation for supported line voltages.



† PC terminal block connectors accept recommended wire sizes from 8 – 18 AWG (10 – 1 mm<sup>2</sup>).

‡ IDC connectors accept wire sizes from 22 – 26 AWG (0.326 – 0.129 mm<sup>2</sup>).

§ KiNET is the Ethernet lighting protocol from Philips Color Kinetics.

## Ordering Information

Item	Type	Item Number	Philips 12NC
Data Enabler IntelliPower	3/4 in / 1/2 in NPT (US trade size conduit)	106-000010-00	910503703265
	M25 / M20 (metric size conduit)	106-000010-01	910503703266

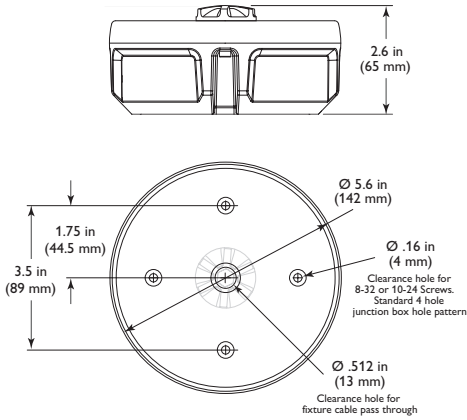
Use Item Number when ordering in North America.

## Included in the box

Data Enabler IntelliPower
8 mm hex wrench
3 mm hex wrench
Flat blade screwdriver
EMI suppression core
Installation Instructions

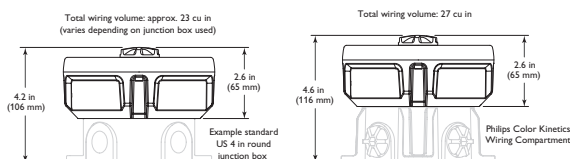
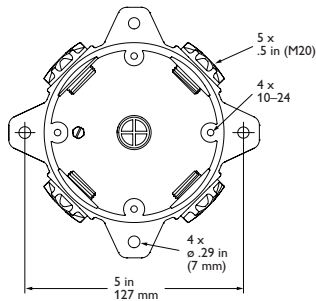
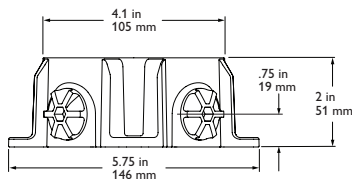
# Data Receiver IntelliPower Specifications

Due to continuous improvements and innovations, specifications may change without notice.



## Included in the box

Data Receiver IntelliPower
(2) #8-32 x 3.5 in screws for indoor installations with a canopy-base fixture attached
(2) #8-32 x 3.0 in screws for indoor installations with no canopy-base fixture attached
(4) #10-24 x 3.5 in screws for outdoor installations with a canopy-base fixture attached
(4) #10-24 x 3.0 in screws for outdoor installations with no canopy-base fixture attached
(4) 5-position lever-style connectors
Strain relief clip
(2) Gaskets
Blast Powercore canopy plug
Wiring Compartment (CE only)
Installation Instructions



Item	Specification	Details
Electrical	Input Voltage	100 – 277 VAC*, auto-ranging, 50 / 60 Hz
	Maximum Input Current	45 mA maximum
	Power Consumption	5 W maximum
Physical	Dimensions (Height x Width x Depth)	2.6 x 5.6 x 5.6 in (65 x 143 x 143 mm)
	Weight	2.0 lbs (0.9 kg)
	Construction	Cast aluminum enclosure
	Finish	Powder-coated black, white, or silver gray matte
	Threaded Opening	1/2 in NPT
	Included Wiring Volume	7 cu in (114.7 cm <sup>3</sup> )
	Temperature Ranges	-40° – 122° F (-40° – 50° C) Operating -20° – 122° F (-20° – 50° C) Startup -40° – 176° F (-40° – 80° C) Storage
	Fixture Connections	6 in (152 mm) flying leads
	Humidity	0 – 95%, non-condensing
	Cooling	Convection
Certification and Safety	Certification	UL / cUL, FCC Class A, CE
	Environment	Dry / Damp / Wet Location, IP66

\* Verify that the line voltage is appropriate for the lighting fixtures in your installation. See a specific fixture's documentation for supported line voltages.



## Wiring Compartment Specifications

Due to continuous improvements and innovations, specifications may change without notice.

Item	Specification	Details
Physical	Dimensions (Height x Width x Depth)	2 x 5.75 x 5.75 in (51 x 146 x 146 mm)
	Weight	0.9 lbs (0.41 kg)
	Construction	Cast aluminum enclosure
	Finish	Powder-coated black, white, or silver gray matte
	Threaded Opening	1/2 in NPT (UL / cUL) / M20 (CE)
Certification and Safety	Included Wiring Volume	20 cu in (327.7 cm <sup>3</sup> )
	Certification	UL / cUL, CE
Environment	Dry / Damp / Wet Location	



## Ordering Information

Item	Housing Color	Item Number	Philips 12NC
Data Receiver IntelliPower UL / cUL	Black	106-000011-00	910503703262
	White	106-000011-01	910503703263
	Silver Gray	106-000011-02	910503703264
Data Receiver IntelliPower CE with Wiring Compartment	Black	106-000011-10	910503704151
	White	106-000011-11	910503704152
	Silver Gray	106-000011-12	910503704150
Wiring Compartment UL / cUL	Black	106-000011-30	910503704147
	White	106-000011-31	910503704148
	Silver Gray	106-000011-32	910503704149
Wiring Compartment CE	Black	106-000011-40	910503703275
	White	106-000011-41	910503703276
	Silver Gray	106-000011-42	910503703277

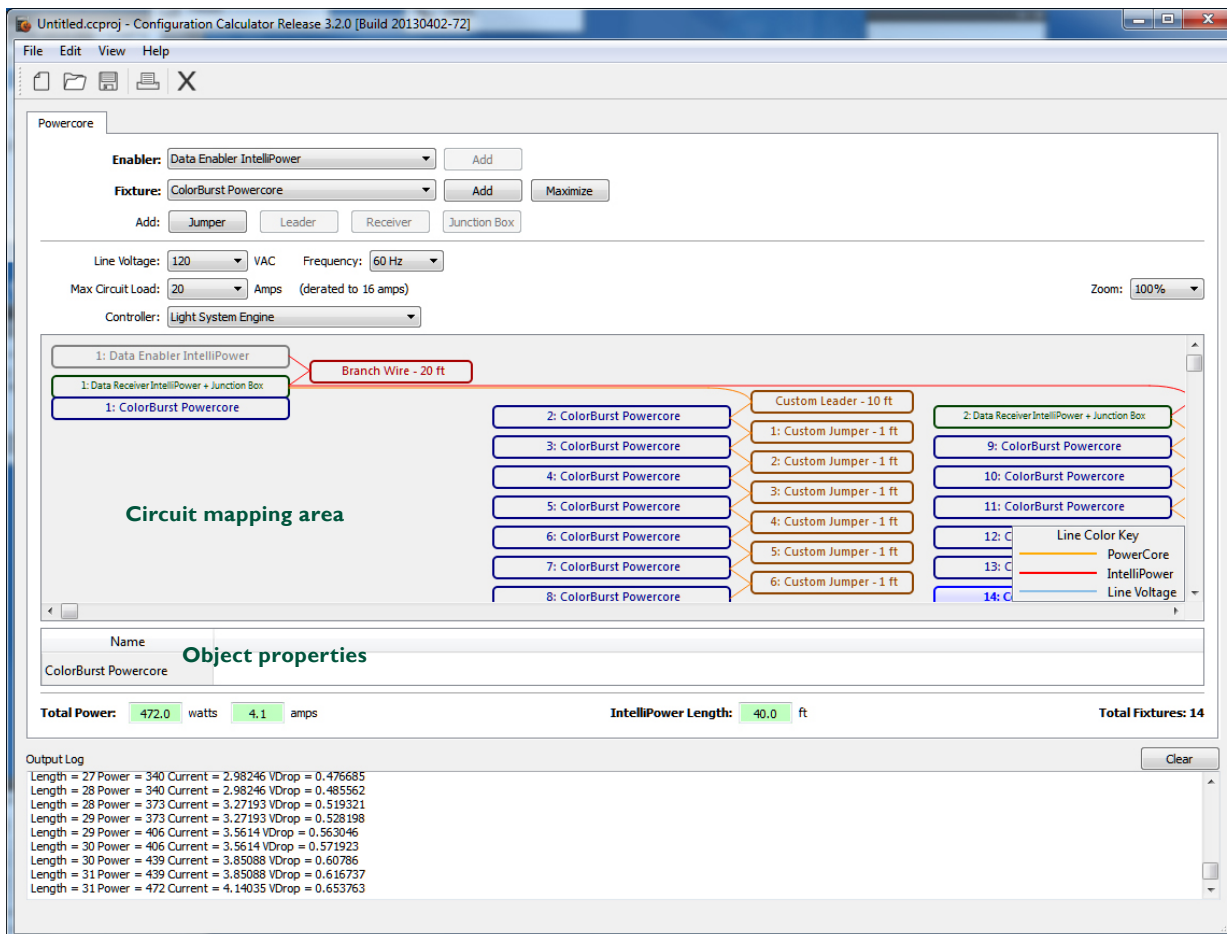
Use Item Number when ordering in North America.

# Using Configuration Calculator to Model IntelliPower Electrical Circuits

Configuration Calculator, an installation tool available to download for free from the Philips Color Kinetics website, lets you model electrical circuits to determine cable run lengths and the maximum number of lighting fixtures per branch.

Keep in mind that Configuration Calculator is for planning purposes only, and does not predict or guarantee the successful performance of IntelliPower systems. Configuration Calculator is not a valid substitute for a site assessment, which must be performed by trained Philips Color Kinetics Applications Engineers, systems integrators, sales representatives, or other qualified professionals. See “Assessing Site Readiness” on page 8 for more information.

You can download the latest version of Configuration Calculator from [www.philipscolorkinetics.com/support/downloads/](http://www.philipscolorkinetics.com/support/downloads/).



## Modeling the Circuit

By default, Configuration Calculator creates a 120 VAC circuit at 60 Hz and a maximum circuit load of 15 amps. To modify the circuit properties, do the following:

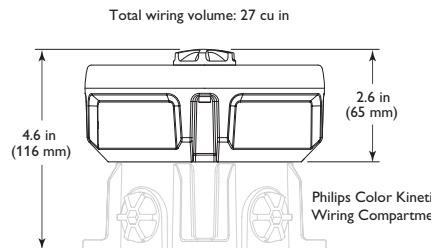
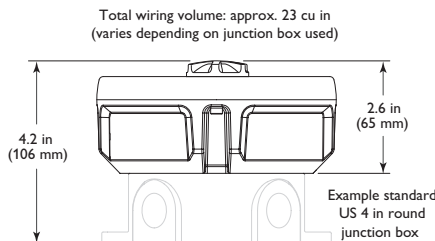
1. From the Line Voltage drop-down list, select the voltage of your circuit.
2. From the Frequency drop-down list, select the frequency of your circuit (50 or 60 Hz).
3. From the Max Circuit Load drop-down list, select the circuit capacity, in amps. Configuration Calculator automatically derates the circuit load to account for electrical overhead.

## Top-Mount Fixtures

Canopy Base
ColorBurst Powercore Architectural
ColorBurst Compact Powercore Architectural
iW Burst Powercore Architectural
iW Burst Compact Powercore Architectural
ColorBlast Powercore
iW Blast Powercore
Threaded Post
ColorBurst Powercore Landscape
ColorBurst Compact Powercore Landscape
iW Burst Powercore Landscape
iW Burst Compact Powercore Landscape

⚠ You cannot mix different fixtures when modeling IntelliPower circuits in Configuration Calculator.

⚠ The Philips Color Kinetics Wiring Compartment affords additional wiring volume, which can support additional runs in certain configurations



## Scenario 1: Top-Mounted Fixtures Only

In this scenario, each Data Receiver IntelliPower device has a top-mounted fixture, such as ColorBurst Powercore or iW Blast Powercore.

1. From the Enabler drop-down list, select Data Enabler IntelliPower.
2. Click the Receiver button to add one or more Data Receiver IntelliPower devices to the circuit.

Configuration Calculator adds an above-ground, 12 AWG stranded branch cable (2 + ground) of 20 ft (6.1 m) between each IntelliPower device. To modify a branch wire, select the branch wire, and modify the details in the object properties area.

3. Add a top-mounted fixture to each Data Receiver IntelliPower device. Select a Data Receiver IntelliPower device in the circuit mapping area and select a top-mounted fixture from the Fixture drop-down list. Repeat for each Data Receiver IntelliPower device on the branch.

## Scenario 2: Pass-Through Configurations

In this scenario, each Data Receiver IntelliPower device begins one or more runs of fixtures connected in series. Data Receiver IntelliPower devices do not have top-mounted fixtures.

1. From the Enabler drop-down list, select Data Enabler IntelliPower.
2. Click the Receiver button to add one or more Data Receiver IntelliPower devices to the circuit. Modify branch wires as necessary, as described in step 2 above.
3. Select a Data Receiver IntelliPower device, and click Leader to add a cable for connecting a run of fixtures.

Configuration Calculator adds a 12 AWG stranded Powercore cable (3 + ground) of 50 ft (15.2 m) to the device. To modify the cable, select it and modify the details in the object properties area.

For star configurations, you can add multiple leader cables to a single Data Receiver IntelliPower device, up to the space limitations of the junction box. To change the type of junction box on which a Data Receiver IntelliPower device is installed, select the device in the circuit mapping area and select a junction box type from the drop-down list at the bottom of the map.

4. To add a fixture to a run, select a leader cable, select a fixture from the Fixture drop-down list, and click Add.

Continue adding fixtures to each run as desired. Add or modify jumper cables between fixtures as your configuration requires. If your configuration exceeds the circuit capacity, the Total Power display (above the Output Log) turns red. To bring your configuration within circuit capacity, remove fixtures or runs, or shorten leader or jumper cables as needed.

**Total Power:** 1825.0 watts 16.0 amps

---

**Output Log**

Length = 71 Power = 1792 Current = 15.7193 VDrop = 3.38286  
 Length = 72 Power = 1792 Current = 15.7193 VDrop = 3.39174  
 Length = 72 Power = 1825 Current = 16.0088 VDrop = 3.47342  
 Total current of 16.0088 amps exceeded the maximum load of 16.  
 Length = 72 Power = 1792 Current = 15.7193 VDrop = 3.39174  
 Length = 71 Power = 1792 Current = 15.7193 VDrop = 3.38286  
 Length = 72 Power = 1792 Current = 15.7193 VDrop = 3.39174  
 Length = 72 Power = 1825 Current = 16.0088 VDrop = 3.47342  
 Total current of 16.0088 amps exceeded the maximum load of 16.

### Scenario 3: Combination Configurations

In this scenario, each Data Receiver IntelliPower device both has a top-mounted fixture and begins one or more runs of fixtures connected in series.

1. From the Enabler drop-down list, select Data Enabler IntelliPower.
2. Click the Receiver button to add one or more Data Receiver IntelliPower devices to the circuit. Modify branch wires as necessary.
3. To add a top-mounted fixture, select a Data Receiver IntelliPower device in the circuit mapping area and select the fixture from the Fixture drop-down list. Repeat for each Data Receiver IntelliPower device which will have a top-mounted device.
4. To connect runs of fixtures, select a Data Receiver IntelliPower device, and click Leader. Modify cables as described in Scenario 2.

For star configurations, you can add multiple leader cables to a single Data Receiver IntelliPower device, up to the space limitations of the junction box. To change the type of junction box on which a Data Receiver IntelliPower device is installed, select the device in the circuit mapping area and select a junction box type from the drop-down list at the bottom of the map.

5. To add a fixture to a run, select a leader cable, select a fixture from the Fixture drop-down list, and click Add.

Continue adding fixtures to each run, as desired. Add or modify jumper cables between fixtures as your configuration requires.

If your configuration exceeds the circuit capacity, the Total Power display (above the Output Log) turns red. To bring your configuration within circuit capacity, remove fixtures or runs, or shorten leader or jumper cables as needed.

## Installing Data Enabler IntelliPower


Data Enabler IntelliPower merges DMX or Ethernet control data with standard 2 + ground wiring (line, neutral, and ground) and outputs the combined power and data stream over standard 2 + ground cable to a Data Receiver IntelliPower. The Data Receiver IntelliPower outputs the combined power and data stream over 3 + ground wiring to IntelliColor or IntelliWhite LED lighting fixtures employing Powercore technology.

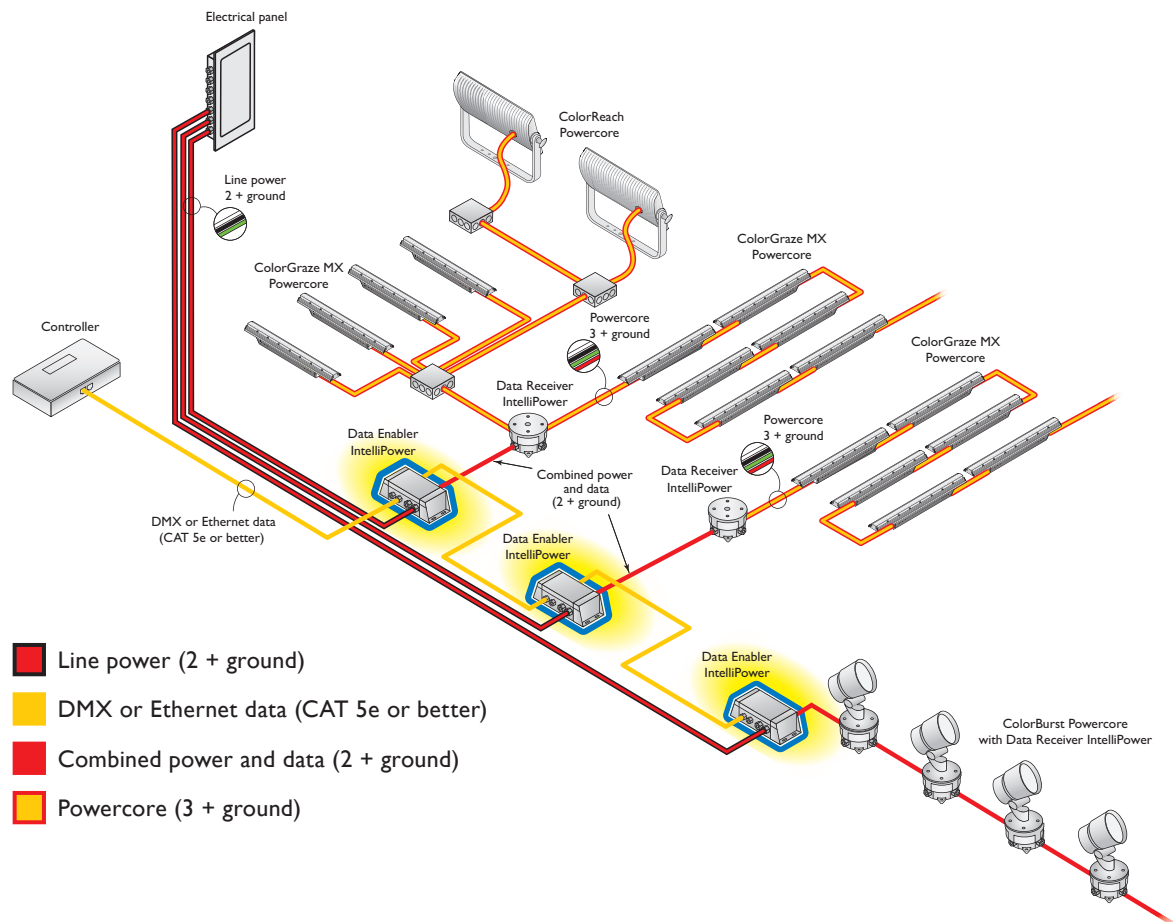
### Owner / User Responsibilities

It is the responsibility of the contractor, installer, purchaser, owner, and user to install, maintain, and operate Data Enabler IntelliPower in such a manner as to comply with all applicable codes, state and local laws, ordinances, and regulations. Consult with the appropriate electrical inspector to ensure compliance.

### Installing in Damp or Wet Locations

When installing in damp or wet locations, seal all junction boxes, power supplies, and other devices with electronics-grade RTV silicone sealant so that water or moisture cannot enter or accumulate in any wiring compartments, cables, fixtures, or other electrical parts. You must use suitable outdoor-rated junction boxes when installing in wet or damp locations. Additionally, you must use gaskets, clamps, and other parts required for installation to comply with all applicable local and national codes.

 Refer to the Data Enabler IntelliPower Installation Instructions for specific warning and caution statements.



## Plan the Installation

To streamline installation and ensure accurate configuration, start with a layout or a lighting design plan that shows the physical layout of the installation and identifies the locations of electrical panels and branches, controllers, switches, Data Enabler IntelliPower devices, Data Receiver IntelliPower devices, intelligent Powercore lighting fixtures, and cables.

✿ Refer to “Planning an IntelliPower System” beginning on page 10 for guidelines on IntelliPower system layouts and configurations.

## Assemble Additional Items

The following additional items are required to mount and connect Data Enabler IntelliPower:

- 4 mounting screws suitable for the mounting surface
- For installations using US trade size conduit, 3/4 in NPT watertight conduit and fittings for power, and 1/2 in NPT watertight conduit and fittings for data, as required by local codes
- For installations using metric size conduit, M25 watertight conduit and fittings for power, and M20 watertight conduit and fittings for data, as required by local codes
- CAT 5e or better data cable, as required
- 2 + ground copper wire, as required. Standard 12 AWG (4 mm<sup>2</sup>) stranded wire is recommended.
- Electronics-grade RTV silicone for installations in damp and wet locations
- Screwdrivers, wire strippers, and other tools as needed

# Inspect Data Enabler IntelliPower and Accessories

Carefully inspect the box containing Data Enabler IntelliPower and the contents for any damage that may have occurred in transit.

We recommend that you ensure your Data Receiver IntelliPower devices are running the latest version of the firmware, and update the firmware if necessary, before positioning and mounting the devices. Refer to pages 64 – 66 of this guide for complete information.

# Position and Mount Data Enabler IntelliPower

Make sure the power is OFF before mounting and connecting Data Enabler IntelliPower.

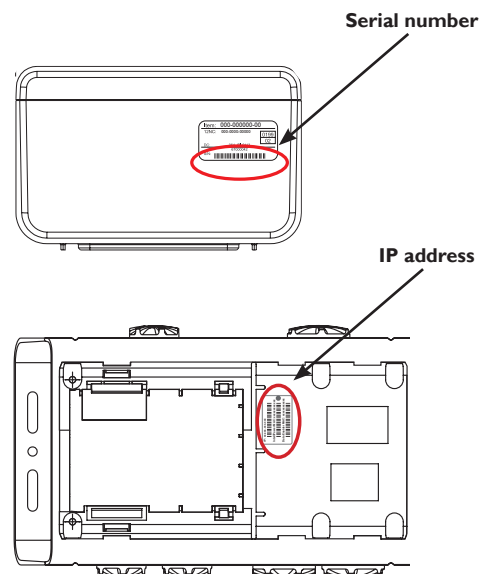
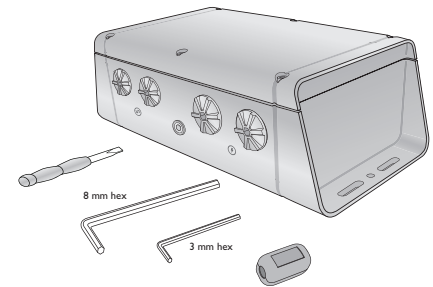
1. Each Data Enabler IntelliPower device is identified by a unique serial number and IP address. The serial number is located on a label on the outside of the Data Enabler IntelliPower housing, and the default IP address is located on a label inside the Data Enabler IntelliPower housing. If your installation requires multiple Data Enabler IntelliPower devices, record the serial numbers (for DMX data networks) or IP addresses (for Ethernet data networks) in a layout grid (typically a spreadsheet or list) for easy reference.
2. Assign each Data Enabler IntelliPower device to a position in the lighting design plan.
3. Position each Data Enabler IntelliPower device in its designated mounting location. Make sure the mounting surface is flat, suitable for the mounting hardware, and clear of debris and other obstructions.

The overall dimensions of each Data Enabler IntelliPower device are 10.5 in (267 mm) wide x 5.4 in (138 mm) deep x 3.4 in (87 mm) high. Make sure the mounting location allows enough space around the housing for air to move freely around the device. Be careful not to obstruct or submerge the vents on either side of the Data Enabler IntelliPower housing.

We recommend orienting each Data Enabler IntelliPower device so that power and data cables enter the input side of the housing (the side with four threaded openings), and the cable connection to the Data Receiver IntelliPower exits the output side (the side with two threaded openings).

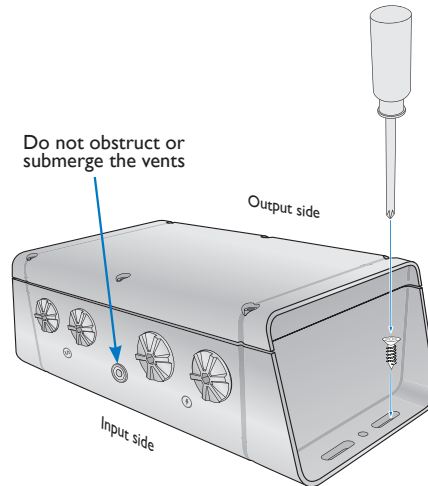
## Included in the box

Data Enabler IntelliPower
8 mm hex wrench
3 mm hex wrench
Flat blade screwdriver
EMI suppression core
Installation Instructions



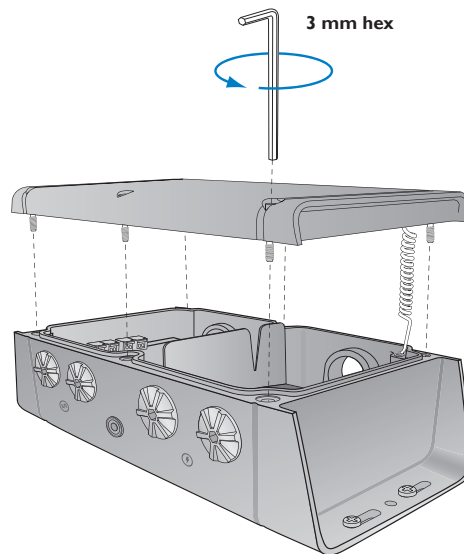


4. Use four suitable mounting screws to secure Data Enabler IntelliPower to the mounting location.



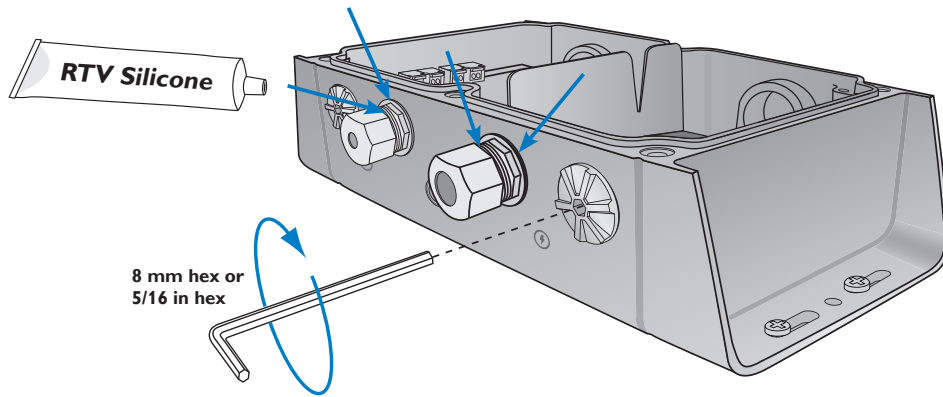
## Prepare for Cable Connections

1. Using the included 3 mm hex wrench, loosen the housing cover's six captive screws to open the Data Enabler IntelliPower housing.



2. Identify which openings to use for power and data cables, and remove the seal plugs from the openings.
  - For installations using US trade size conduit, the larger openings accommodate 3/4 in NPT cable connectors for power, and the smaller openings accommodate 1/2 in NPT cable connectors for data.
  - For installations using metric size conduit, the larger openings accommodate M25 cable connectors for power, and the smaller openings accommodate M20 cable connectors for data.
3. Install and tighten cable connectors to manufacturer's specs. Do not overtighten.

- Torque remaining seal plugs to approximately 19 in-lb (2.2 Nm).



**\*** In wet or damp locations, use electronics-grade RTV silicone to seal all points of entry in all Data Enabler IntelliPower devices, Data Receiver IntelliPower devices, and junction boxes to prevent water infiltration.

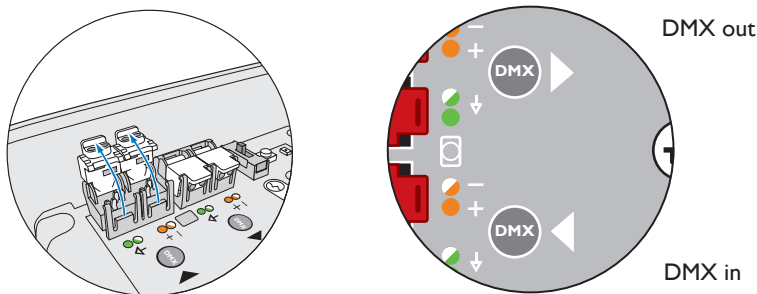
## Make Data Input Connections

Data Enabler IntelliPower has different connectors for DMX and Ethernet data inputs. Instead of RJ45 connectors, Data Enabler IntelliPower uses double-pair, double-entry IDC connectors, which accept unstripped cable wire strands.

### DMX Data Input Connections

The RJ45 pinouts for Philips Color Kinetics DMX controllers differs slightly from the popular DMX scheme maintained by the Entertainment Services and Technology Association (ESTA). Third-party DMX controllers, on the other hand, typically use the standard ESTA pinouts.

- Run CAT 5e or better cable from the data output port of a Philips Color Kinetics DMX controller, such as iPlayer 3, or a third-party DMX controller.
- If necessary, cut the cable jacket to expose the wire pairs. Do not strip the wire pairs.
- Locate the DMX input pivot connectors inside the Data Enabler IntelliPower housing. Open both wire stuffers.



**\*** IDC connectors accept wire sizes from 22 – 26 AWG (0.326 – 0.129 mm<sup>2</sup>).

- Insert the wires into the IDC connector's wire entry holes from left to right as follows:
  - For Philips Color Kinetics controllers, Green, Green / White, Orange, and Orange / White.
  - For third-party controllers, Brown, Brown / White, Orange, and Orange / White.

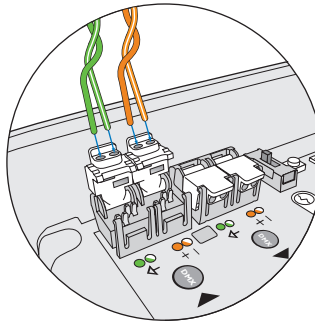
### Philips Color Kinetics RJ45 DMX Pinouts

RJ45 Pin #	DMX Signal	Wire Color
1	DMX_DATA-	Orange / White
2	DMX_DATA+	Orange
3	GND	Green / White
6	GND	Green

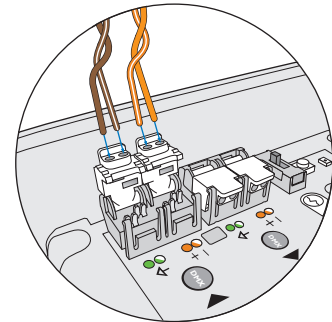
### ESTA RJ45 DMX Pinouts

RJ45 Pin #	DMX Signal	Wire Color
1	DMX_DATA+	Orange / White
2	DMX_DATA-	Orange
7	GND	Brown / White
8	GND	Brown

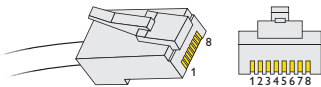
The unused wires should be capped and turned back.



Philips Color Kinetics RJ45 DMX pinouts

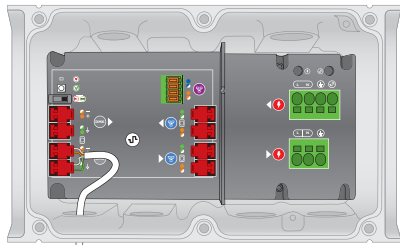


ESTA RJ45 DMX pinouts

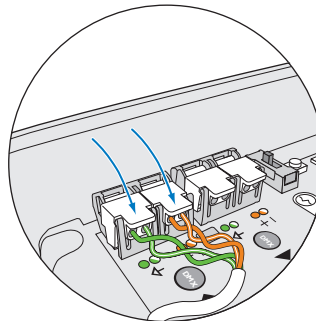


5. While holding the wires firmly in place, push down on the wire stuffers until they click shut.

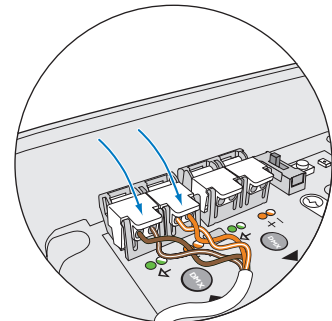
5.



DMX input

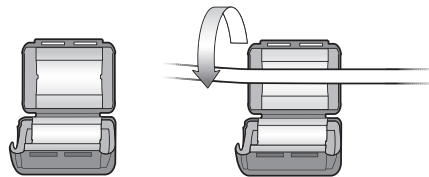


Philips Color Kinetics RJ45 DMX pinouts

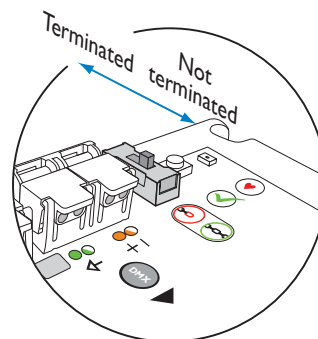
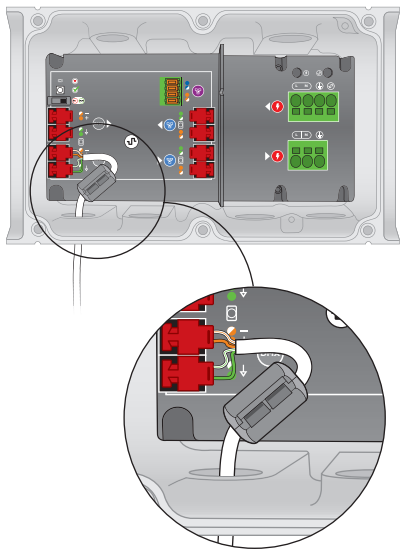


ESTA RJ45 DMX pinouts

Attach the included EMI suppression core to the data input cable inside the Data Enabler IntelliPower housing.



6. Unless you're connecting additional Data Enabler IntelliPower devices in series, use the termination switch to terminate the series.



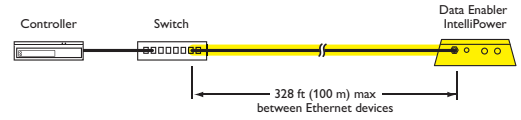
## Ethernet Data Input Connections

1. Run CAT 5e or better cable from the data output port of a Philips Color Kinetics Ethernet controller, such as Light System Manager or Video System Manager Pro, or a third-party Ethernet controller.

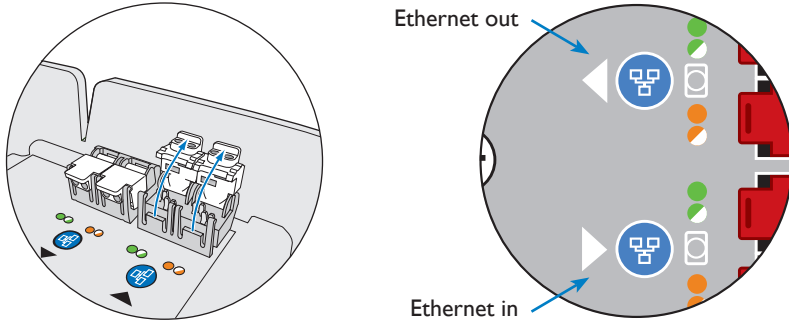
2. If necessary, cut the cable jacket to expose the wire pairs, but do not strip them.

The Brown, Brown / White, Blue, and Blue / White wires are not used and should be capped and turned back.

3. Locate the Ethernet input pivot connectors inside the Data Enabler IntelliPower housing. Open both wire stuffers.

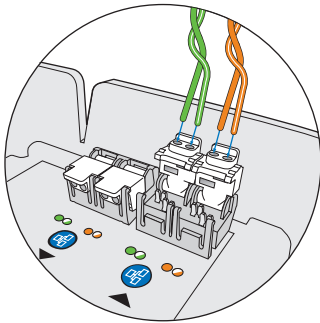


Ethernet maximum data cable length

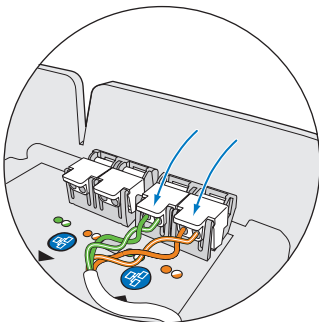


\* IDC connectors accept wire sizes from 22 – 26 AWG (0.326 – 0.129 mm<sup>2</sup>).

4. From left to right, following the wire color codes printed on the data board, insert the Green, Green / White, Orange, and Orange / White wires into the pivot connector's wire entry holes.

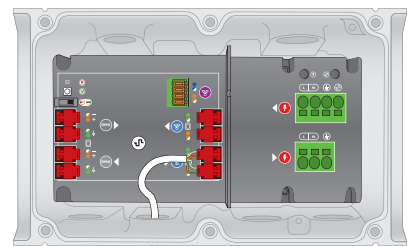
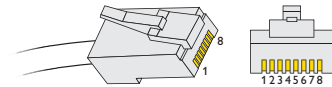


5. While holding the wires firmly in place, push down on the wire stuffers until they click shut.

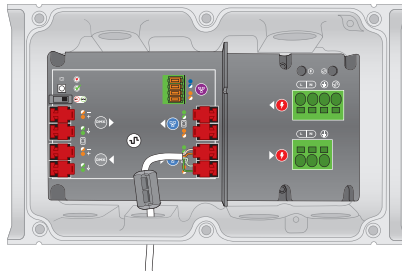


## Ethernet RJ45 Pinouts

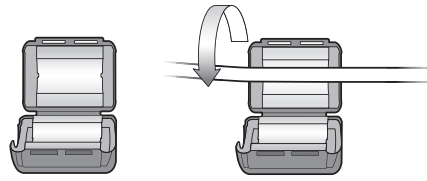
RJ45 Pin #	Ethernet Signal	Wire Color
1	RxD+	Orange / White
2	RxD-	Orange
3	TxD+	Green / White
6	TxD-	Green



Ethernet input



6. Attach the included EMI suppression core to the data input cable inside the Data Enabler IntelliPower housing.



## Connecting Data Enabler IntelliPower Devices in Series (Optional)

Installations with large numbers of fixtures may require multiple Data Enabler IntelliPower devices installed on multiple electrical branches (one Data Enabler IntelliPower device per branch). You can connect up to 15 Data Enabler IntelliPower devices in series to control lights on multiple electrical branches from a single control source.

In typical installations, you connect a DMX or Ethernet controller to the first Data Enabler IntelliPower device in a series using the DMX Data In or Ethernet Data In port, as described on pages 26 – 28, then connect additional devices in the series using the Ethernet Data Out and Ethernet Data In ports. We recommend using the Ethernet ports to connect Data Enabler IntelliPower devices in series even if you're using a DMX controller, as two-way Ethernet communications offer significant advantages for configuring, commissioning, maintaining, and troubleshooting the IntelliPower network.


You use QuickPlay Pro addressing and configuration software to manage IntelliPower devices installed in your lighting network. In Ethernet environments, you connect a computer running QuickPlay Pro to the lighting network's Ethernet switch to discover, configure, troubleshoot, and test IntelliPower devices installed across multiple electrical branches. In DMX environments, we recommend that you connect an Ethernet "tail" to the first Data Enabler IntelliPower device in the series so that you can connect a computer to the lighting network without having to remove the Data Enabler IntelliPower cover.

You can connect up to 15 Data Enabler IntelliPower devices in series. Use additional Ethernet switch ports to connect additional Data Enabler IntelliPower devices to your network.

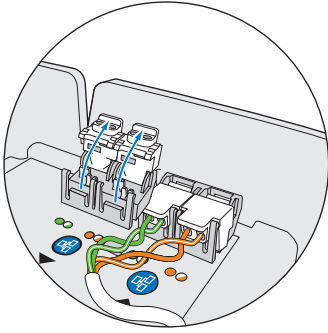
1. Cut a sufficient length of CAT 5e or better cable to connect the first Data Enabler IntelliPower device in a series with the next.
2. If necessary, cut both ends of the cable jacket to expose the wire pairs. Do not strip the wire pairs.

The Brown, Brown / White, Blue, and Blue / White wires are not used and should be capped and turned back.

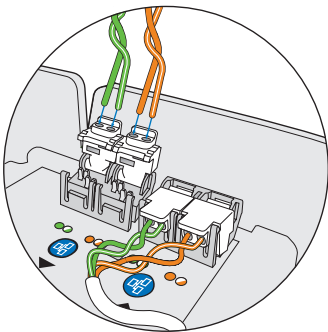
3. Run one end of the cable through a cable connector installed on the output side of the first Data Enabler IntelliPower device in the series (the side with two openings).

 Refer to "Planning an IntelliPower System" beginning on page 10 for electrical and data configuration guidelines, including recommended configurations and maximum cable lengths.

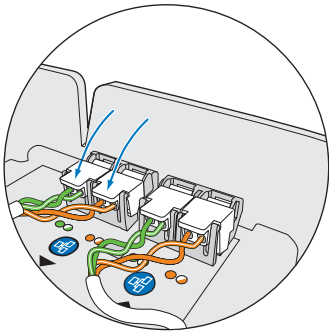
4. Locate the Ethernet output pivot connectors inside the Data Enabler IntelliPower housing. Open both wire stuffers.



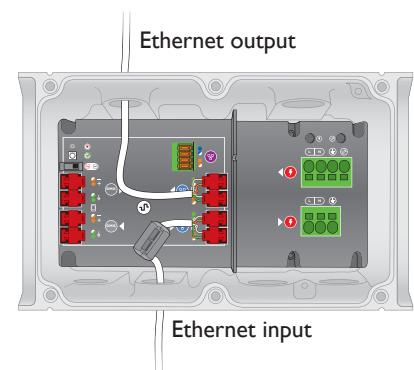
5. From left to right, following the wire codes printed on the data board, insert the Green, Green / White, Orange, and Orange / White wires into the pivot connector's wire entry holes.



6. While holding the wires firmly in place, push down on the wire stuffers until they click shut.

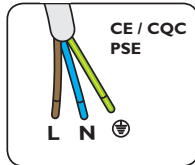
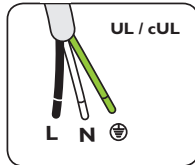
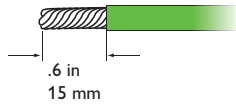


7. Run the free end of the cable to the next Data Enabler IntelliPower device in the series. Make Ethernet data input connections. Attach the included EMI suppression core to the data input cable inside the Data Enabler IntelliPower housing.
8. Repeat for each Data Enabler IntelliPower device in the series.
9. If you're using a DMX lighting controller, we recommend installing an Ethernet "tail" to the Ethernet Data In port of the first Data Enabler IntelliPower device in the series, for system configuration and maintenance. Attach a CAT 5e or better cable to the Ethernet Data In port of the first Data Enabler IntelliPower device in the series, running the cable through a cable connector installed on an available data input opening in the Data Enabler IntelliPower housing. Make sure to leave enough cable length outside of the Data Enabler IntelliPower housing to easily connect the RJ-45 connector to a computer running QuickPlay Pro.

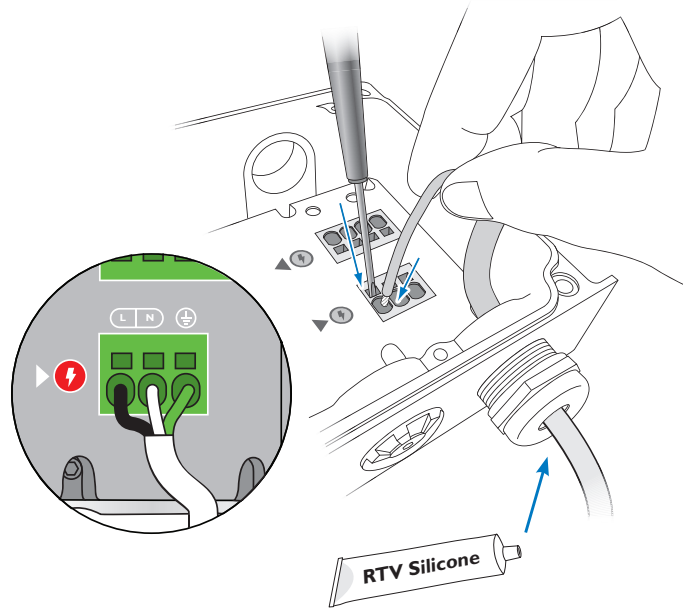
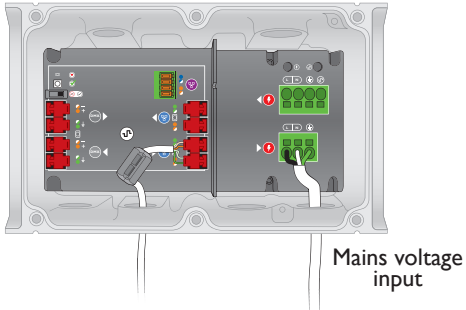


# Make Power Input Connections

1. Run the 2 + ground cable or conduit from a mains power source through a cable connector installed on the input side of the Data Enabler IntelliPower housing (the side with the four openings).
2. Strip .6 in (15 mm) of insulation from the wires. If using stranded wire, twist each wire tight to secure the wire threads.
3. Locate the mains voltage 3-wire PC terminal block connector inside the Data Enabler IntelliPower housing.
4. Securely install line, neutral, and ground in the terminal block:
  - Insert the included flathead screwdriver in the slot above a wire entry hole.
  - Firmly insert the correct wire in the wire entry hole.
  - Remove the screwdriver.
5. If installing the Data Enabler IntelliPower in a wet or damp location, seal the cable connector with electronics-grade RTV silicone.



\* PC terminal block connectors accept recommended wire sizes from 8 – 18 AWG (10 – 1 mm<sup>2</sup>).

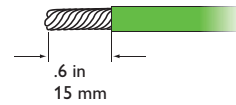


# Make Power Output Connections

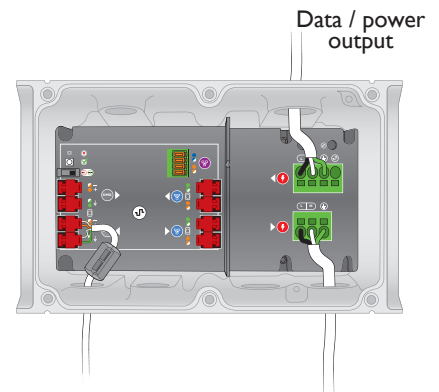
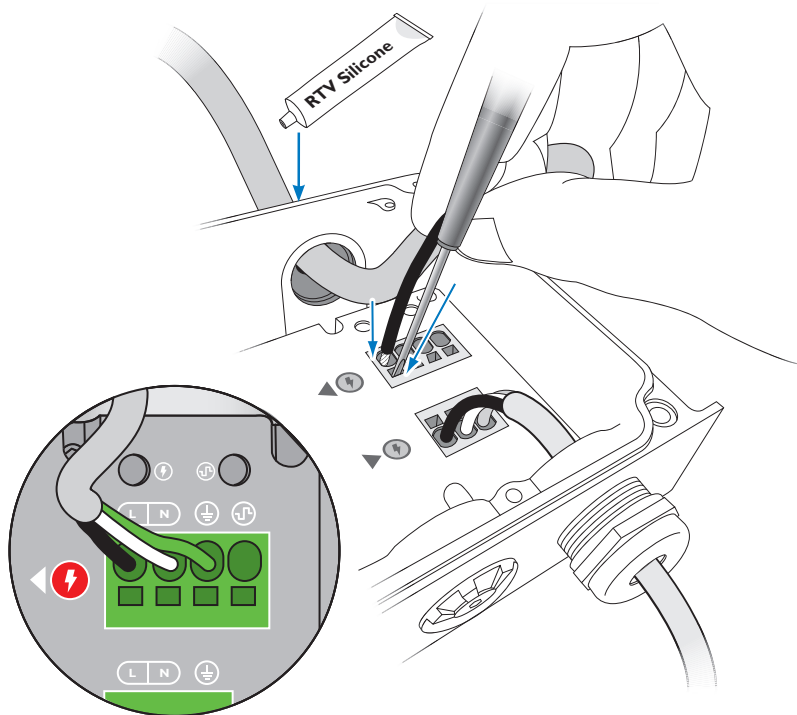
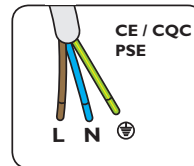
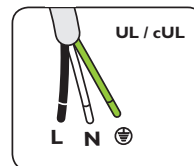
Data Enabler IntelliPower merges DMX or Ethernet control data with power and outputs it over existing 2 + ground wiring for connection to a Data Receiver IntelliPower. The Data Receiver IntelliPower, in turn, translates the merged 2 + ground power / data stream into a 3 + ground scheme for delivery to intelligent LED lighting fixtures using Powercore.

You connect 2 + ground cable to a power / data output PC terminal block located inside the Data Enabler IntelliPower housing. Although the terminal block has four slots, you use only the line, neutral, and ground slots in IntelliPower installations, because control data is transmitted over line, neutral, and ground until it is split out by a Data Receiver IntelliPower. Terminal block connectors accept solid or stranded wire sizes from 8 – 18 AWG (10 – 1 mm<sup>2</sup>).

1. Run 2 + ground cable through a cable connector installed on the output side of the Data Enabler IntelliPower housing (the side with two openings).
2. Strip .6 in (15 mm) of insulation from the wires. If using stranded wire, twist each wire tight to secure the wire threads.
3. Locate the 4-wire data / power output PC terminal block connector inside the Data Enabler IntelliPower housing.
4. Securely install line, neutral, and ground in the terminal block. (The data slot is not used.)
  - Insert the included flathead screwdriver in the slot above a wire entry hole.
  - Firmly insert the correct wire in the wire entry hole.
  - Remove the screwdriver.
5. If installing the Data Enabler IntelliPower in a wet or damp location, seal the cable connector with electronics-grade RTV silicone.



\* PC terminal block connectors accept recommended wire sizes from 8 – 18 AWG (10 – 1 mm<sup>2</sup>).





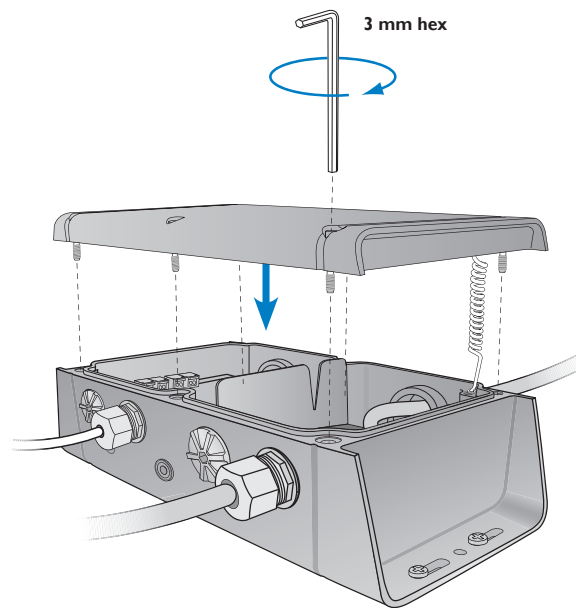
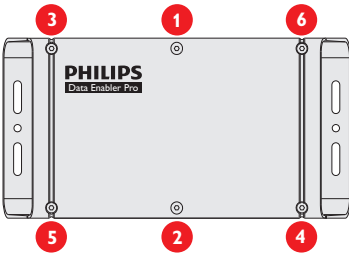
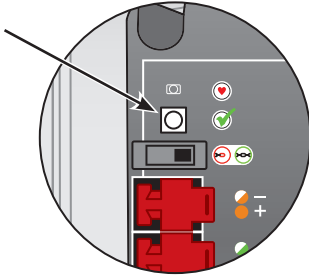
## Secure Data Enabler IntelliPower Cover

Once you have finished connecting all data and power inputs and outputs, secure the Data Enabler IntelliPower cover.

Depending on the details of your installation, you may want install all Data Receiver IntelliPower devices and fixtures on a branch before securing the Data Enabler IntelliPower cover. For convenience in commissioning, a test button located inside the Data Enabler IntelliPower housing offers push-button verification that all connected lights are installed properly and receiving data. Refer to “Testing Connected Lights” on page 58 for details.

1. Seat the cover on the Data Enabler IntelliPower housing.
2. Using the included 3 mm hex wrench, tighten the housing cover’s six captured screws, in the order indicated in the diagram to the left.
3. Torque each screw to approximately 16 in-lb (1.8 Nm).

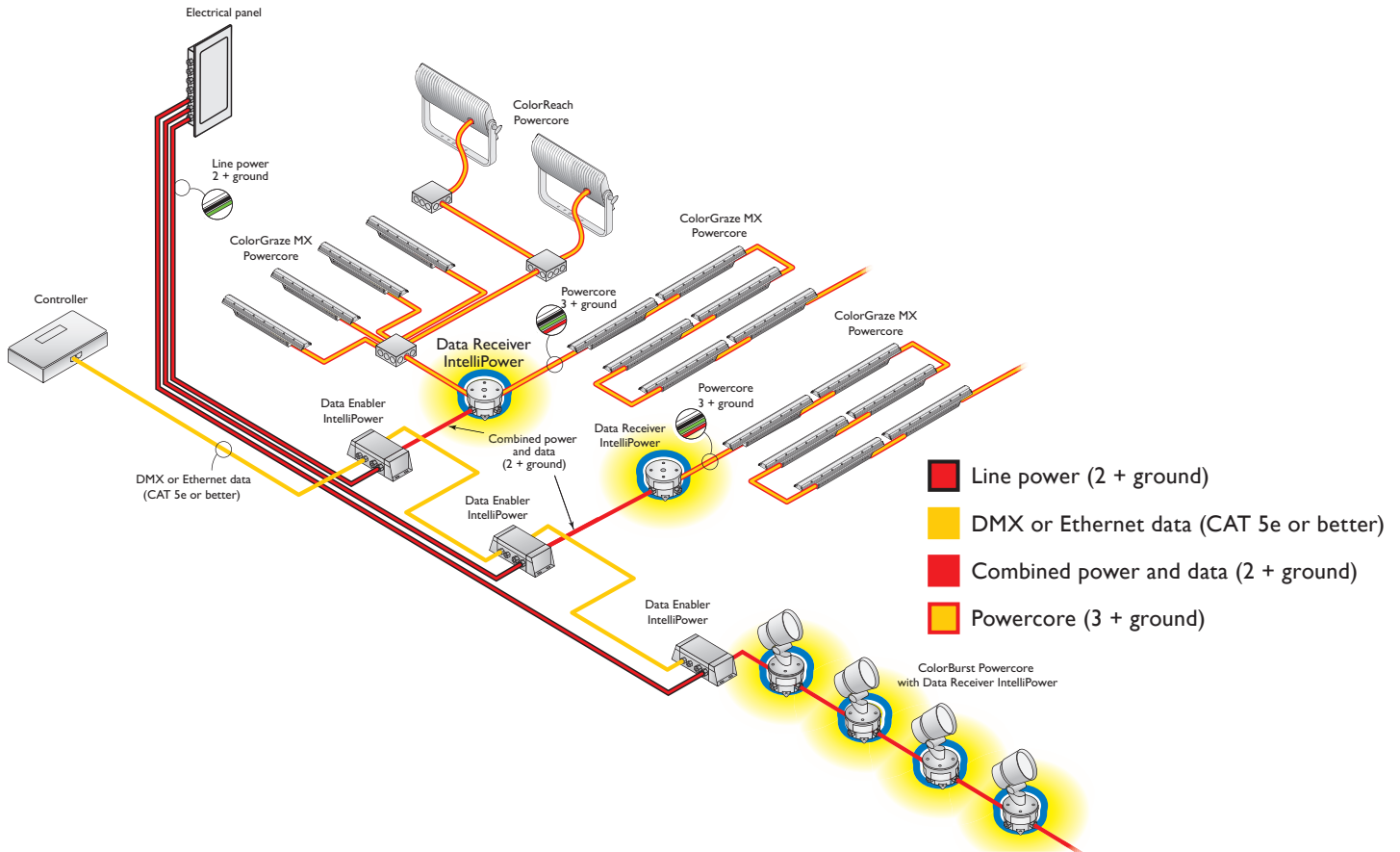
Test button



## Installing Data Receiver IntelliPower

Data Enabler IntelliPower merges DMX or Ethernet control data with standard 2 + ground wiring (line, neutral, and ground) and outputs the combined power and data stream over standard 2 + ground cable to Data Receiver IntelliPower devices. The Data Receiver IntelliPower outputs the combined power and data stream over 3 + ground wiring to IntelliColor or IntelliWhite LED lighting fixtures employing Powercore technology.

You can use multiple Data Receiver IntelliPower devices per power branch to support virtually any lighting fixture configuration, up to the circuit’s power and data limits. You can top-mount intelligent Powercore LED lighting fixtures with canopy bases or threaded posts directly to the Data Receiver IntelliPower. You can also use a Data Receiver IntelliPower device to begin a run of fixtures connected in series. You can combine these installation methods however you wish.



### Top-Mounting Fixtures to Data Receiver IntelliPower

The table to the right lists the intelligent LED lighting fixtures that can be top-mounted to Data Receiver IntelliPower. Installation methods for standard installation of Data Receiver IntelliPower, and for top-mounting Burst Powercore Architectural, Burst Powercore Landscape, and Blast Powercore, differ from one another. Each installation method is detailed in a separate procedure below.

### Data Receiver IntelliPower Wiring Capacity

In North America, you mount Data Receiver IntelliPower devices to standard US 4 in round junction boxes, rated for your application. When installed, the total wiring volume is typically around 23 cu in, depending on the junction box. Electrical codes may limit the number of connections (inputs and outputs) you can make.

Philips Color Kinetics offers an outdoor-rated Wiring Compartment designed for use with Data Receiver IntelliPower devices. The Wiring Compartment is taller than a standard US junction box, affording an increased total wiring volume of 27 cu in. You can use the Wiring Compartment in locations where standard US junction boxes are not available.

In North America, you can use the Wiring Compartment in place of a standard US junction box for additional wiring volume, which may allow you to make additional 3 + ground output connections. You can use Configuration Calculator to determine how many output connections you can make, based on configuration, wire gauge, junction box type, and other considerations. See “Using Configuration Calculator to Model IntelliPower Electrical Circuits” on page 18 for more information.

### Top-Mount Fixtures

Canopy Base
ColorBurst Powercore Architectural
ColorBurst Compact Powercore Architectural
iW Burst Powercore Architectural
iW Burst Compact Powercore Architectural
ColorBlast Powercore
iW Blast Powercore
Threaded Post
ColorBurst Powercore Landscape
ColorBurst Compact Powercore Landscape
iW Burst Powercore Landscape
iW Burst Compact Powercore Landscape



Burst Powercore Architectural top-mounted to Data Receiver IntelliPower

☛ Refer to the Data Receiver IntelliPower Installation Instructions for specific warning and caution statements.

### Owner / User Responsibilities

It is the responsibility of the contractor, installer, purchaser, owner, and user to install, maintain, and operate Data Receiver IntelliPower in such a manner as to comply with all applicable codes, state and local laws, ordinances, and regulations. Consult with the appropriate electrical inspector to ensure compliance.

### Installing in Damp or Wet Locations

When installing in damp or wet locations, seal all junction boxes, power supplies, and other devices with electronics-grade RTV silicone sealant so that water or moisture cannot enter or accumulate in any wiring compartments, cables, fixtures, or other electrical parts. You must use suitable outdoor-rated junction boxes when installing in wet or damp locations. Additionally, you must use gaskets, clamps, and other parts required for installation to comply with all applicable local and national codes.

## Begin Data Receiver IntelliPower Installation

To streamline installation and ensure accurate configuration, start with a layout or a lighting design plan that shows the physical layout of the installation and identifies the locations of electrical panels and branches, controllers, switches, Data Enabler IntelliPower devices, Data Receiver IntelliPower devices, Philips Color Kinetics lighting fixtures, and cables.

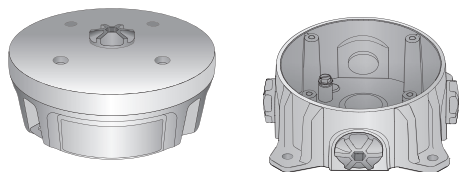
### Assemble Additional Items

The following additional items are required to mount and connect Data Receiver IntelliPower:

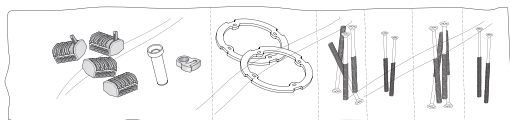
- The included mounting screws suitable for the mounting method (standard or top-mount) and environment (dry or damp / wet)
- The included gaskets
- The included 5-position lever-style connectors, or other wire nuts or connectors rated for your installation
- The included strain relief clip for top-mounting canopy-base fixtures
- The included Blast Powercore canopy plug for top-mounting Blast Powercore fixtures in damp or wet environments
- 2 + ground copper wire for connecting Data Receiver IntelliPower to the combined data / power stream, as required. Standard 12 AWG (4 mm<sup>2</sup>) stranded wire is recommended.
- 3 + ground copper wire for fixture connections, as required. Standard 12 AWG (4 mm<sup>2</sup>) stranded wire is recommended.
- Electronics-grade RTV silicone for installations in damp and wet locations
- Screwdrivers, wire strippers, and other tools as needed

### Included in the box

Data Receiver IntelliPower
(2) #8-32 x 3.5 in screws for indoor installations with a canopy-base fixture attached
(2) #8-32 x 3.0 in screws for indoor installations with no canopy-base fixture attached
(4) #10-24 x 3.5 in screws for outdoor installations with a canopy-base fixture attached
(4) #10-24 x 3.0 in screws for outdoor installations with no canopy-base fixture attached
(4) 5-position lever-style connectors
Strain relief clip
(2) Gaskets
Blast Powercore canopy plug
Wiring Compartment (CE only)
Installation Instructions



CE only



### Unpack and Prepare Data Receiver IntelliPower

Carefully inspect the box containing Data Receiver IntelliPower and the contents for any damage that may have occurred in transit.

We recommend that you ensure your Data Receiver IntelliPower devices are running the latest version of the firmware, and update the firmware if necessary, before positioning and mounting the devices. Refer to pages 64 – 66 of this guide for complete information.

1. Carefully inspect the box containing Data Receiver IntelliPower and the contents for any damage that may have occurred in transit.
2. Each Data Receiver IntelliPower device is identified by a unique serial number and IP address. The serial number and default IP addresses are located on a label on the side of the Data Receiver IntelliPower housing. If your installation requires multiple Data Receiver IntelliPower devices, record the serial numbers (for DMX data networks) or IP addresses (for Ethernet data networks) in a layout grid (typically a spreadsheet or list) for easy reference.
3. Assign each Data Receiver IntelliPower device to a position in the lighting design plan.



## Mount and Wire Junction Boxes or Wiring Compartments

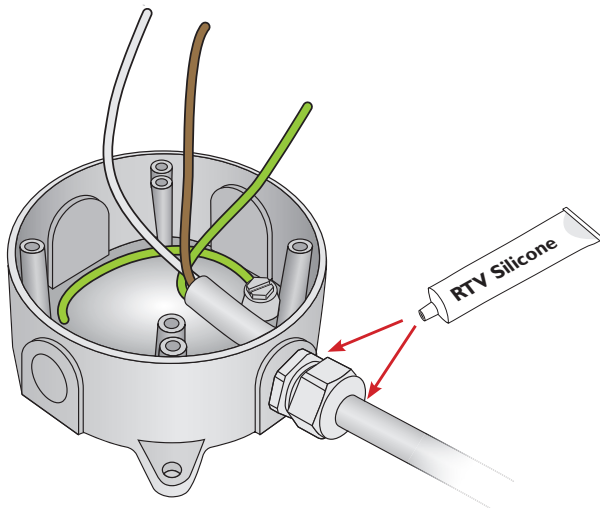
Make sure the power is OFF.

1. Each Data Receiver IntelliPower mounts to a Wiring Compartment or to a 4 in (102 mm) round US electrical junction box, rated for your application, with 3.5 in (89 mm) center-to-center screw holes.

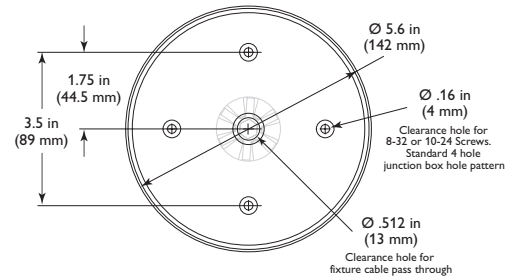
The overall dimensions of each Data Receiver IntelliPower are 5.6 in (142 mm) in diameter x 2.6 in (65 mm) high, including the seal plug on the top. Installed to a standard US 4 in round junction box, the overall height is 4.2 in (106 mm). Installed to a Wiring Compartment, the overall height is 4.6 in (116 mm).

The height requirements increase significantly when lighting fixtures are top-mounted on the Data Receiver IntelliPower. Make sure the mounting location allows enough space around the housing for air to move freely around the device and, if applicable, a top-mounted lighting fixture.

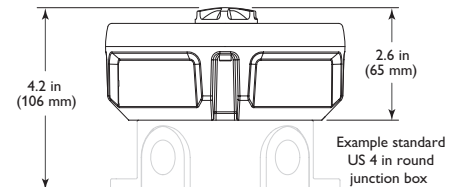
2. Run the 2 + ground combined power / data cable from a Data Enabler IntelliPower device to the first Data Receiver IntelliPower location on a branch. Use a cable connector rated for your application.



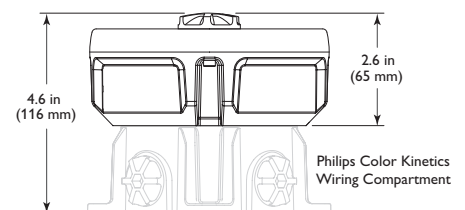
3. If connecting additional Data Receiver IntelliPower devices in series, run a standard 2 + ground cable through an available port. Use a cable connector rated for your application.
4. If connecting a run of Powercore fixtures to the Data Receiver IntelliPower, run the appropriate fixture Leader Cable, or 3 + ground wire, through an available port. Use a cable connector rated for your application.



Total wiring volume: approx. 23 cu in (varies depending on junction box used)

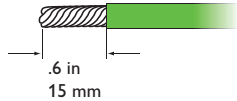


Total wiring volume: 27 cu in



**\*** Wiring volume and electrical codes limit the number of connections you can make to a Data Receiver IntelliPower device. You can use Configuration Calculator to determine how many output connections you can make, based on configuration, wire gauge, junction box type, and other considerations. See "Using Configuration Calculator to Model IntelliPower Electrical Circuits" on page 20 for more information.

✳ For details on installing and configuring an intelligent Powercore fixture, refer to the specific fixture's *Installations Instructions* or *Product Guide*.



Intelligent Powercore fixtures have either a detachable leader cable with flying leads, or an integrated power / data cable. Leader cables range from 10 ft (3 m) to 60 ft (18.3 m) in length, while integrated power / data cables can be as long as 12 ft (3.7 m) or as short as 6 in (152 mm).

Fixtures with detachable leader cables, such as ColorGraze Powercore and iColor Cove MX Powercore, are connected together by means of integrated end-to-end connectors or jumper cables.

For fixtures with integrated power / data cables, such as ColorBlast Powercore and ColorBurst Powercore, use a sufficient length of 3 + ground copper wire to connect fixtures to each other and to the Data Receiver IntelliPower. Standard 12 AWG (4 mm<sup>2</sup>) stranded wire is recommended, but the wiring you use depends on local electrical codes.

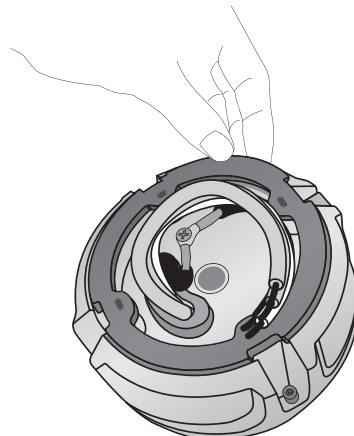
- Strip .6 in (15 mm) of insulation from the wires inside the junction box or Wiring Compartment. If using stranded wire, twist each wire tight to secure the wire threads.
- If installing the junction box or Wiring Compartment in a wet or damp location, seal all cable connectors with electronics-grade RTV silicone.

### Continue the Installation

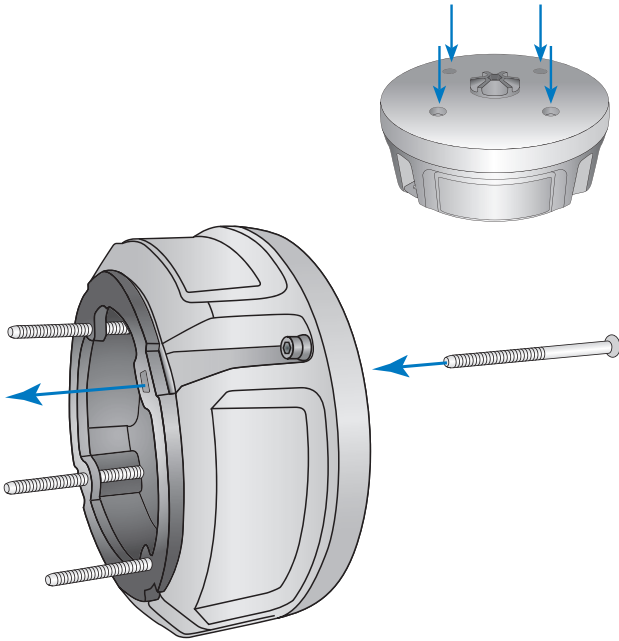
- ▶ For standard installations (installations in which no fixture is top-mounted to Data Receiver IntelliPower, continue with “Standard Data Receiver IntelliPower Installation,” beginning at the bottom of this page.
- ▶ To mount a Burst Powercore Architectural fixture directly onto Data Receiver IntelliPower, refer to “Top-Mounting Burst Powercore Architectural Fixtures,” beginning on page 41.
- ▶ To mount a Burst Powercore Landscape fixture directly onto Data Receiver IntelliPower, refer to “Top-Mounting Burst Powercore Landscape Fixtures,” beginning on page 47.
- ▶ To mount a Blast Powercore fixture directly onto Data Receiver IntelliPower, refer to “Top-Mounting Blast Powercore Fixtures,” beginning on page 52.

## Standard Data Receiver IntelliPower Installation

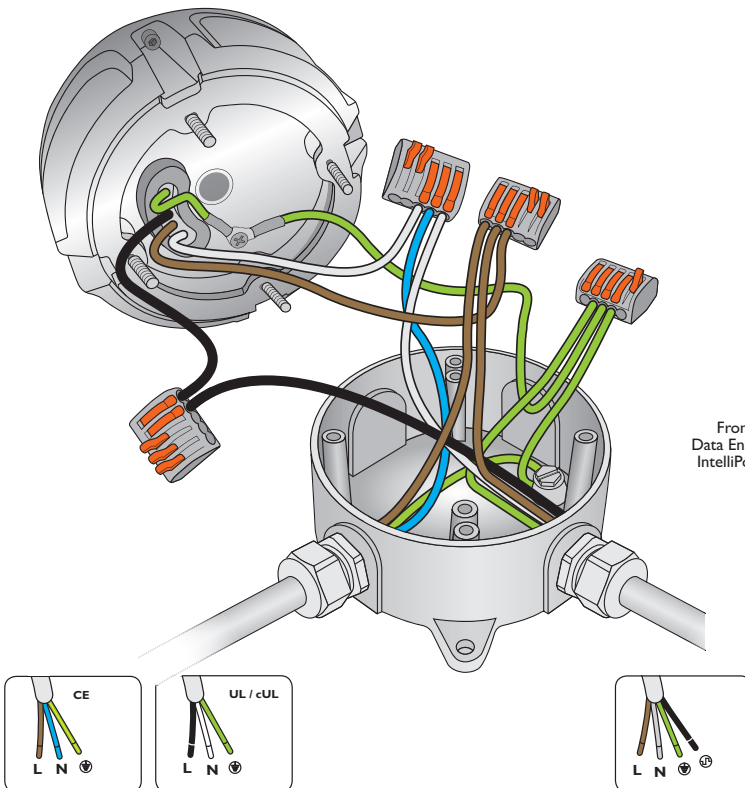
- Follow steps 1 – 6 in “Begin Data Receiver IntelliPower Installation,” beginning on page 35.
- Seat an included gasket in the Data Receiver IntelliPower channel. Line up the holes in gasket and with the screw holes in the Data Receiver IntelliPower channel.



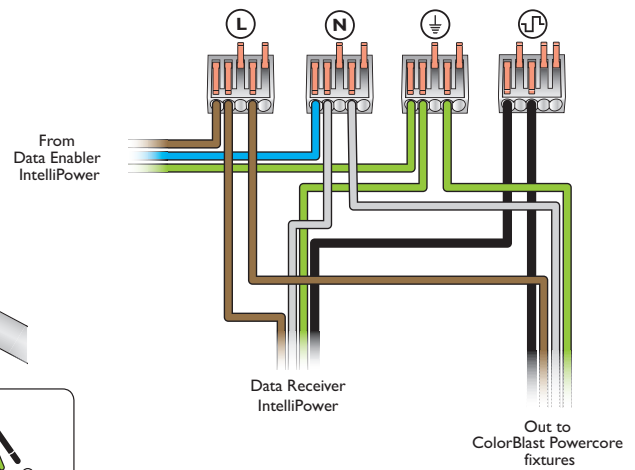
3. Push screws through the Data Receiver IntelliPower housing and the seated gasket.
  - For installations in dry locations, use the two included #8-32 x 3 in screws
  - For installations in damp or wet locations, use the four included #10-24 x 3 in screws.



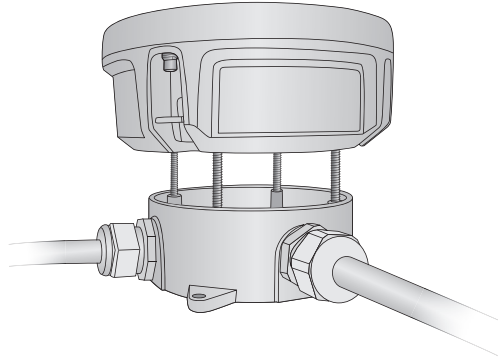
4. Wire Data Receiver IntelliPower to the junction box or Wiring Compartment using the included five-position lever-style connectors.



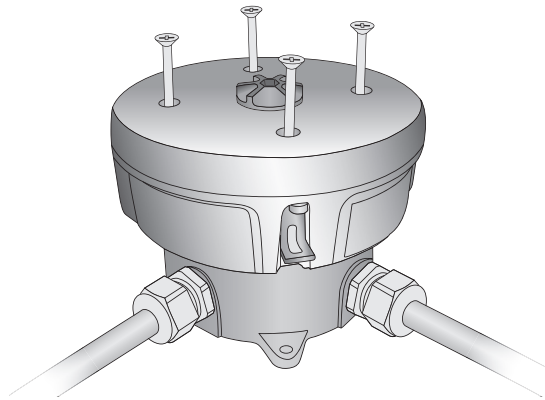
#### Wiring Example



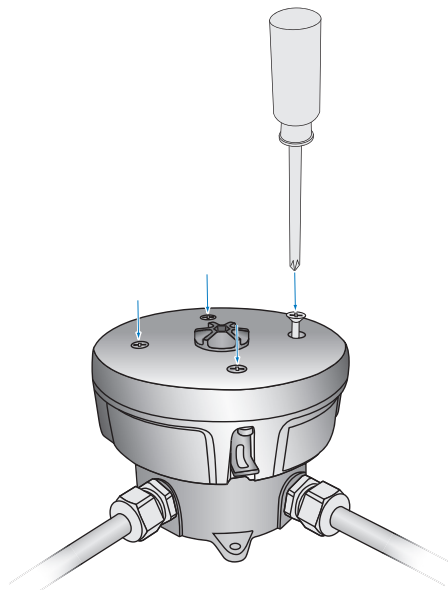
5. Align the screws to the screw holes in the junction box or Wiring Compartment.



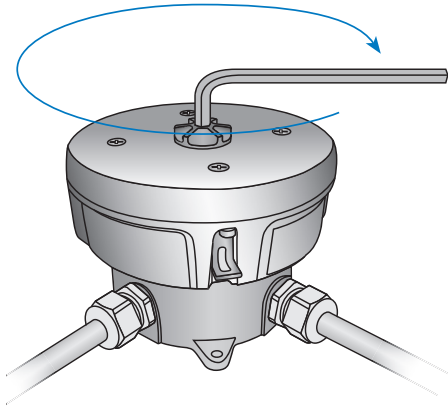
6. Push Data Receiver IntelliPower onto the junction box or Wiring Compartment, taking care not to pinch the wires. As you push down, the screws push up.



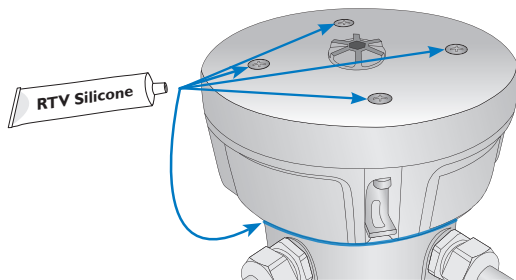
7. Tighten the screws down through the Data Receiver IntelliPower housing into the junction box or Wiring Compartment.



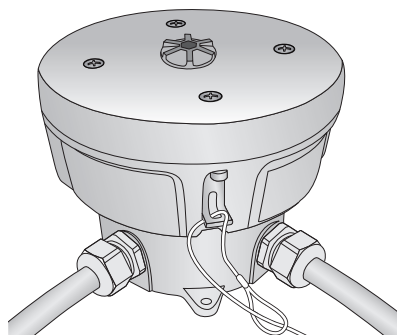
- Confirm that the seal plug on the top of the Data Receiver IntelliPower housing is tight. If necessary, torque the seal plug to approximately 19 in-lb (2.2 Nm).



- For installations in damp or wet environments, seal the screws and joint between the Data Receiver IntelliPower device and the junction box or Wiring Compartment with electronics-grade RTV silicone.



- When dictated by local or state code or advised by a structural engineer, attach a safety cable to the bracket on the side of the Data Receiver IntelliPower housing. Attach the safety cable to a secure anchor point using a method that follows the code or engineer's requirements.



- Repeat steps 1 – 10 for additional Data Receiver IntelliPower devices, as needed.

### Safety cable minimum requirements

Material	304 or 316 stainless steel
Size	5/32 in (4 mm) nominal diameter Minimum break load must be greater than 2,400 lb (1,089 kg)



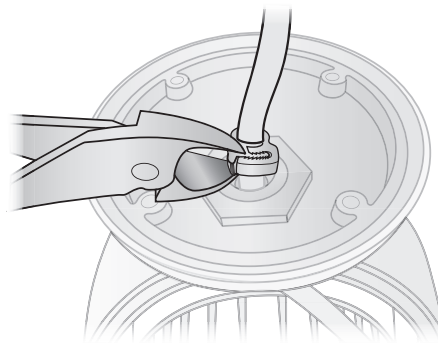
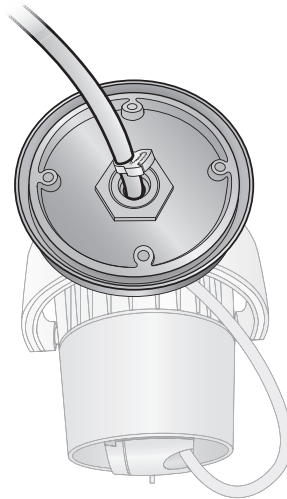
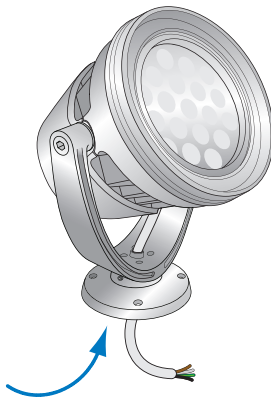
## Top-Mounting Burst Powercore Architectural Fixtures

Architectural versions of ColorBurst Powercore, ColorBurst Compact Powercore, iW Burst Powercore, and iW Burst Compact Powercore feature a canopy base designed to mount to a standard US 4 in round junction box, Wiring Compartment, or Data Receiver IntelliPower device. When you top-mount a Burst Powercore fixture to a Data Receiver IntelliPower device, all connections are made inside the junction box or Wiring Compartment.

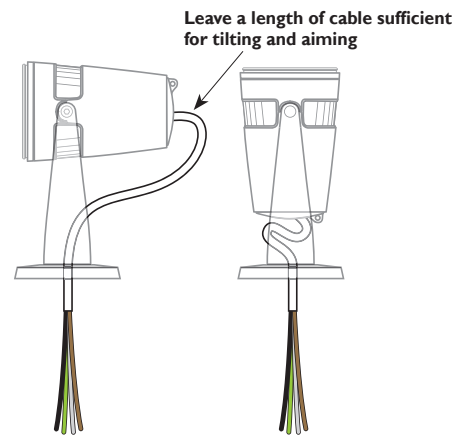
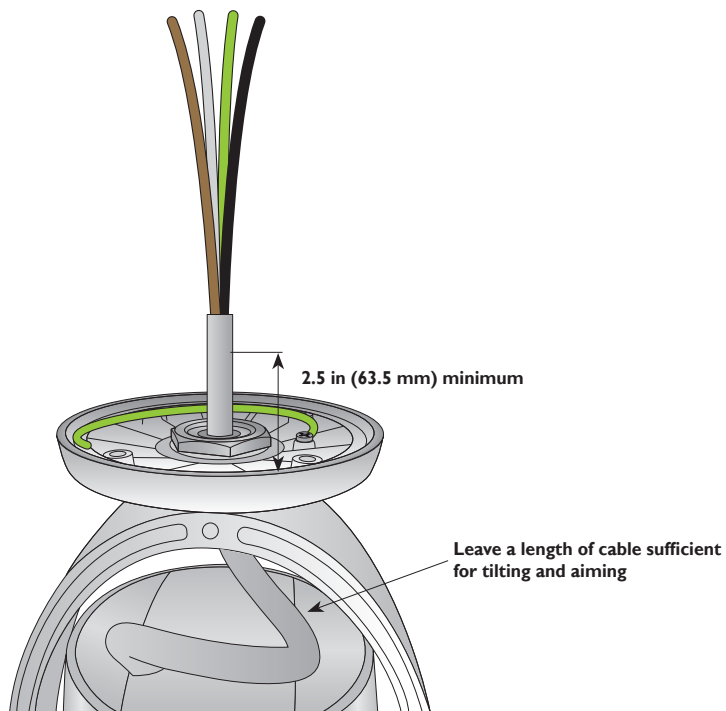
Top-mounting may be desirable or required in retrofit situations where 2 + ground cable cannot be replaced, or where you cannot run new 3 + ground cable — for example, in historic buildings where existing wiring and mounting points must be used, or in exterior applications where existing wiring is underground or otherwise cost-prohibitive to access and replace.

To top-mount a Burst Powercore Architectural fixture, you attach the fixture to the Data Receiver IntelliPower, then mount the assembly to an installed junction box or Wiring Compartment.

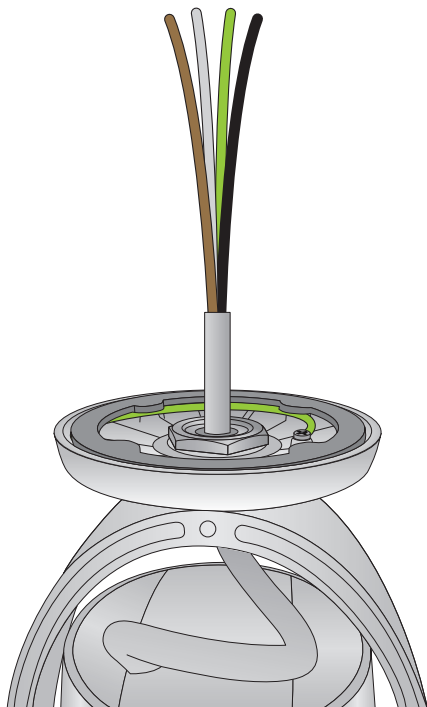
1. Follow steps 1 – 6 in “Begin Data Receiver IntelliPower Installation,” beginning on page 35.
2. Remove the nylon strain relief clamp from the fixture’s leader cable where it exits the underside of the canopy base.



3. Trim the Burst Powercore Architectural cable to leave at least 2.5 in (63.5 mm) exposed for inserting through the Data Receiver IntelliPower housing and wiring into the junction box or Wiring Compartment. Make sure to leave a sufficient length of cable between the canopy base and the fixture housing to aim the fixture as desired after installation.

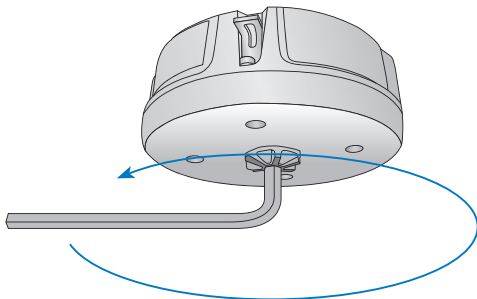
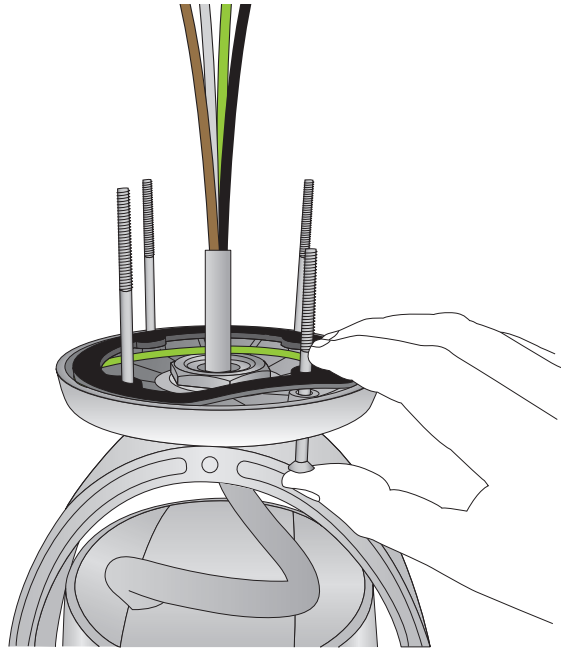


4. Seat an included gasket in the channel in the base of the Burst Powercore Architectural fixture. Line up the holes in gasket and with the screw holes in the fixture channel.



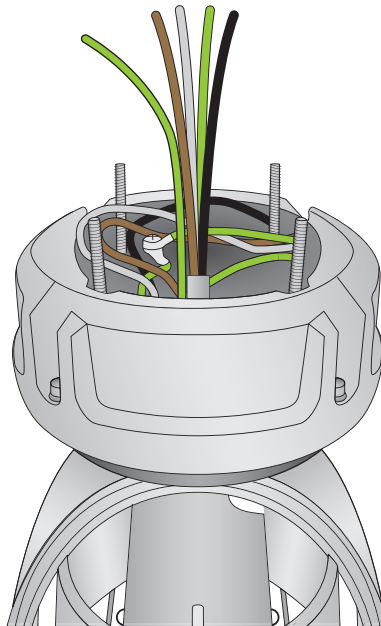
5. Push screws through the fixture's canopy base and the seated gasket.

- For installations in dry locations, use the two included #8-32 x 3.5 in screws
- For installations in damp or wet locations, use the four included #10-24 x 3.5 in screws.

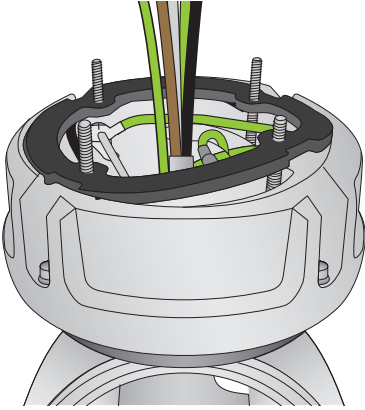


6. Remove the seal plug from the Data Receiver IntelliPower housing.

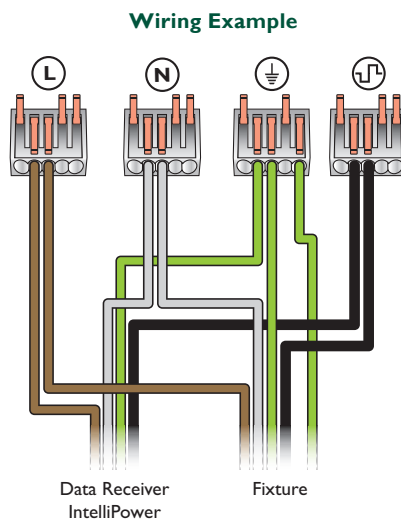
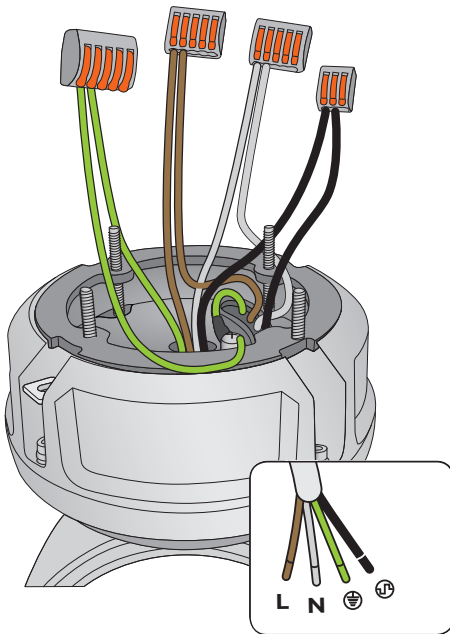
7. Insert the ground wire and integrated power / data cable from the Burst Powercore Architectural fixture through the opening in the top of the Data Receiver IntelliPower. Align the Data Receiver IntelliPower over the screws and set it onto the fixture base, taking care not to pinch any wires or cables.



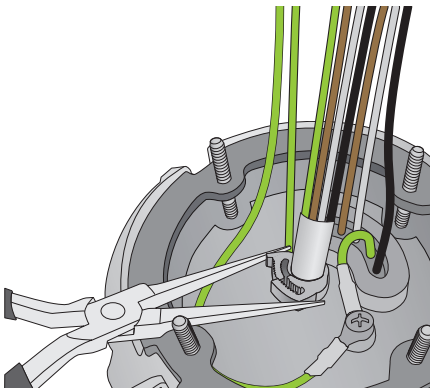
8. Slide an included gasket over the screws and seat it in the Data Receiver IntelliPower channel.



9. Wire the Burst Powercore Architectural fixture and the Data Receiver IntelliPower together using the included 5-position lever-style connectors.



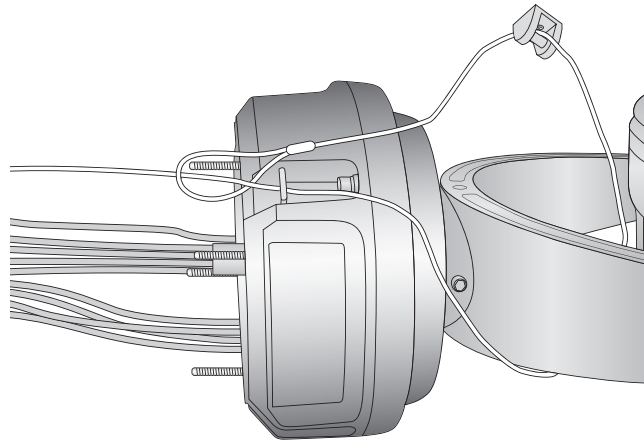
10. Attach the included strain relief clip to the fixture cable where it exits the underside of the Data Enabler IntelliPower housing.



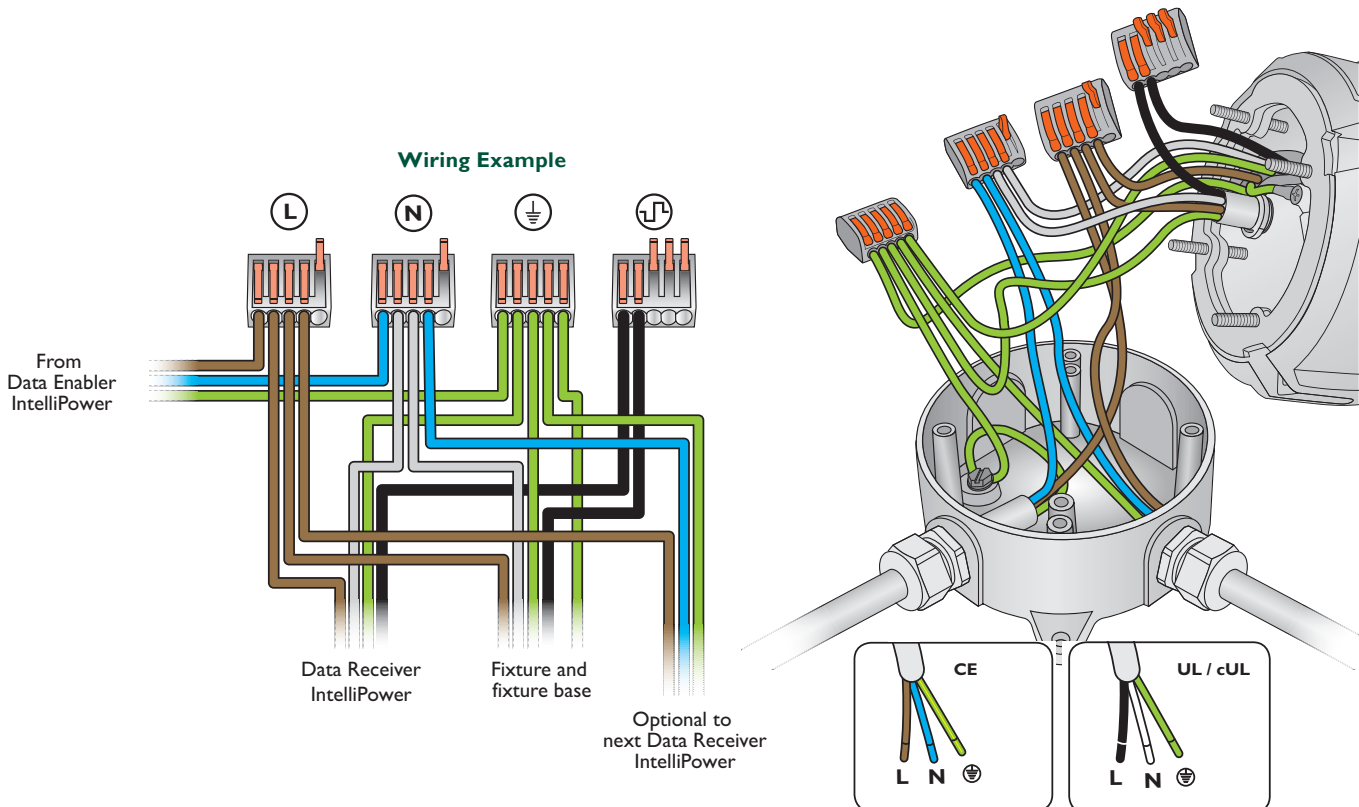
## Safety cable minimum requirements

Material	304 or 316 stainless steel
Size	5/32 in (4 mm) nominal diameter Minimum break load must be greater than 2,400 lb (1,089 kg)

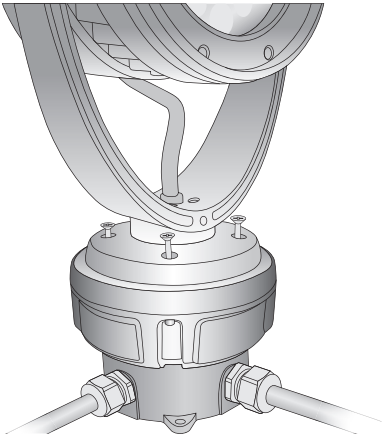
11. When dictated by local or state code or advised by a structural engineer, run a safety cable through both the bracket on the side of the Data Receiver IntelliPower housing and the Burst Powercore Architectural yoke. Attach the safety cable to a secure anchor point using a method that follows the code or engineer's requirements.



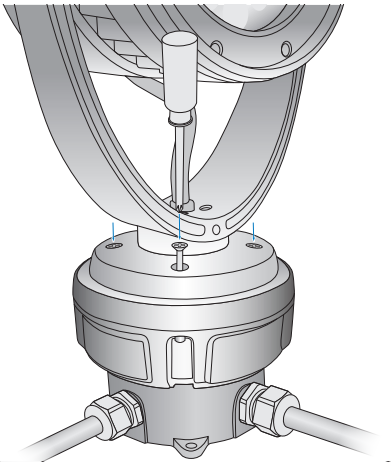
12. Wire the Data Receiver IntelliPower to the junction box or Wiring Compartment.



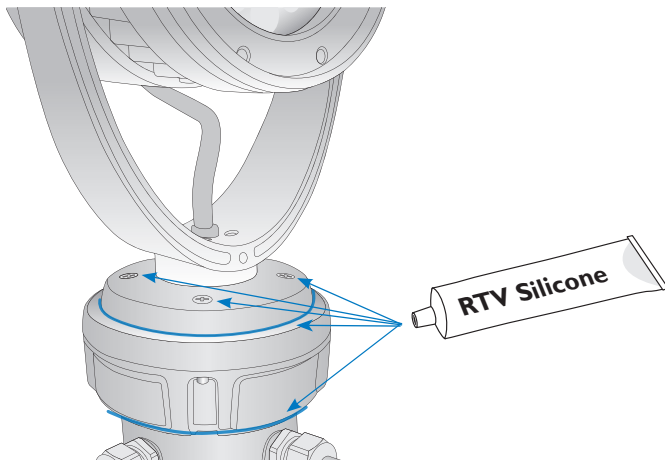
13. Align the screws in the fixture / Data Receiver IntelliPower assembly to the screw holes in the junction box or Wiring Compartment, taking care not to pinch the wires. As you push the assembly down, the screws push up.



14. Tighten the screws down through the fixture / Data Receiver IntelliPower assembly and into the junction box or Wiring Compartment.



15. For installations in damp or wet environments, seal the screws and joints with electronics-grade RTV silicone.



16. Repeat steps 1 – 15 for additional Data Receiver IntelliPower devices, as needed.

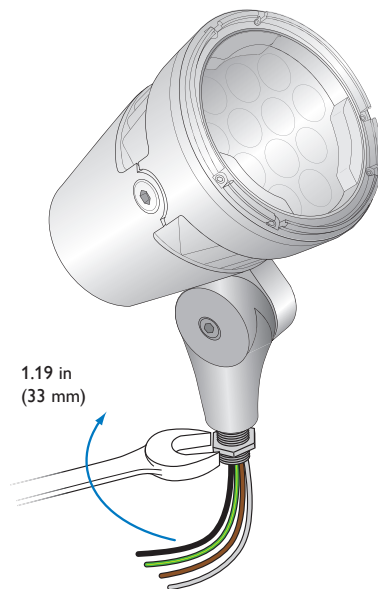
# Top-Mounting Burst Powercore Landscape Fixtures

Landscape versions of ColorBurst Powercore, ColorBurst Compact Powercore, iW Burst Powercore, and iW Burst Compact Powercore feature a threaded mounting post designed to mount to the threaded opening in the top of the Data Receiver IntelliPower housing. When you top-mount a Burst Powercore fixture to a Data Receiver IntelliPower device, all connections are made inside the junction box or Wiring Compartment.

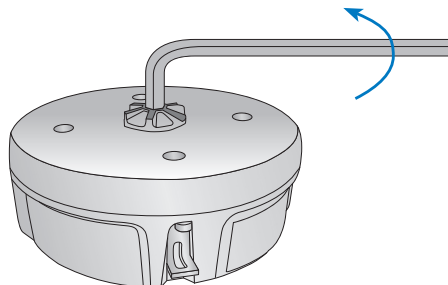
Top-mounting may be desirable or required in retrofit situations where 2 + ground cable cannot be replaced, or where you cannot run new 3 + ground cable — for example, in historic buildings where existing wiring and mounting points must be used, or in exterior applications where existing wiring is underground or otherwise cost-prohibitive to access and replace.

To top-mount a Burst Powercore Landscape fixture, you attach the fixture to the Data Receiver IntelliPower, then mount the assembly to an installed junction box or Wiring Compartment.

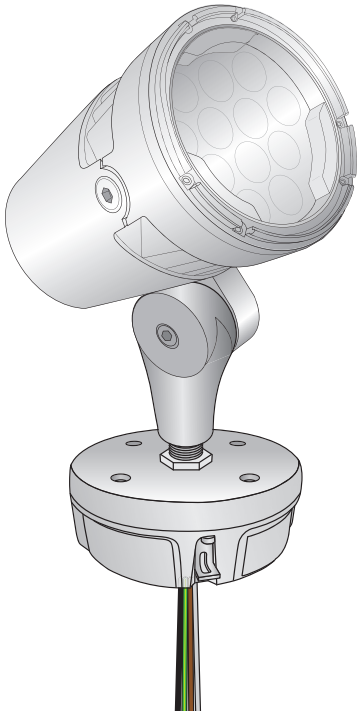
1. Follow steps 1 – 6 in “Begin Data Receiver IntelliPower Installation,” beginning on page 35.
2. Thread the locking nut onto the Burst Powercore Landscape threaded post.



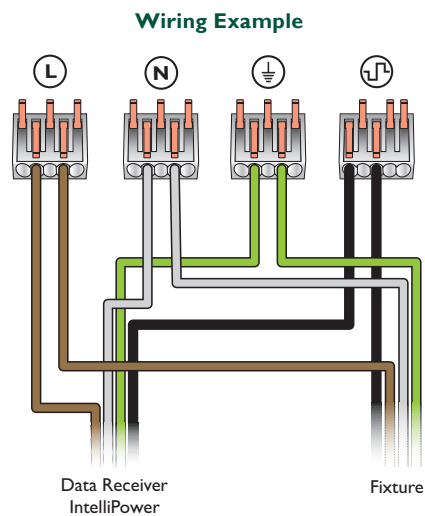
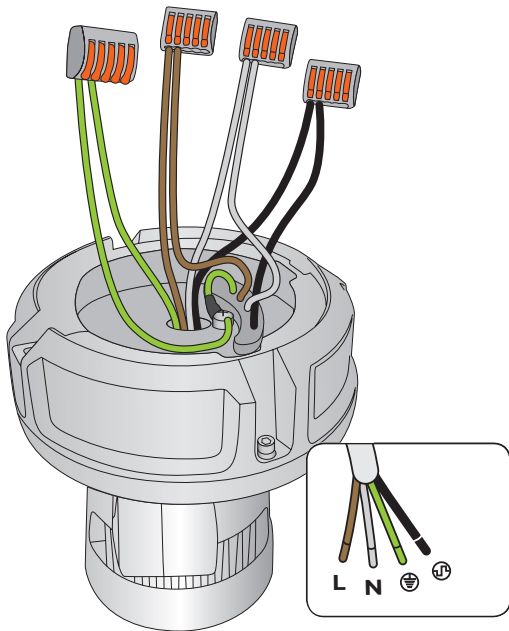
3. Remove the seal plug from the Data Receiver IntelliPower housing.



4. Thread the Burst Powercore Landscape fixture cable through the opening in the top of the Data Receiver IntelliPower Housing. Loosely attach the fixture to Data Receiver IntelliPower, but do not tighten the locking nut.

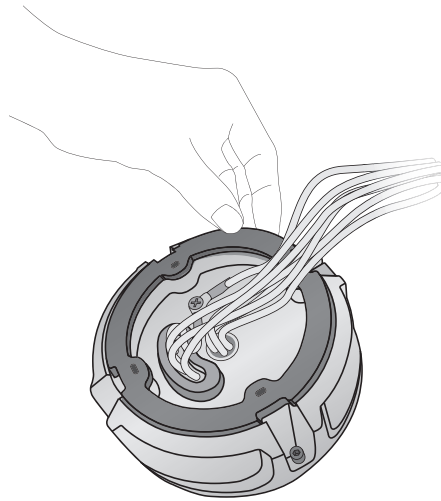


5. Wire the Burst Powercore Landscape fixture and the Data Receiver IntelliPower together using the included 5-position lever-style connectors.



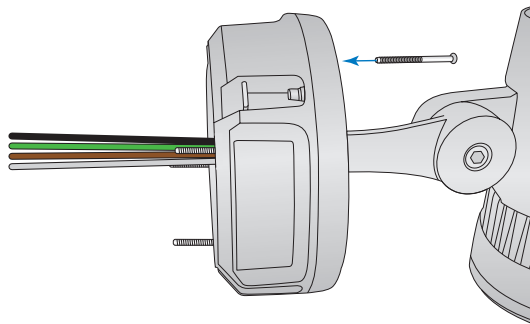
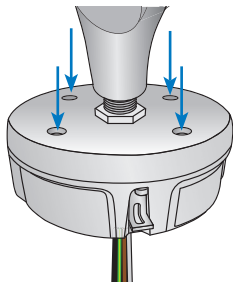


6. Seat an included gasket in the Data Receiver IntelliPower channel. Line up the holes in gasket and with the screw holes in the Data Receiver IntelliPower channel.

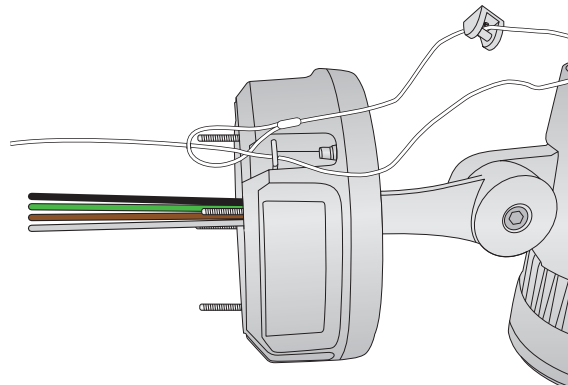


7. Push screws through the Data Receiver IntelliPower housing and the seated gasket.

- For installations in dry locations, use the two included #8-32 x 3 in screws
- For installations in damp or wet locations, use the four included #10-24 x 3 in screws.



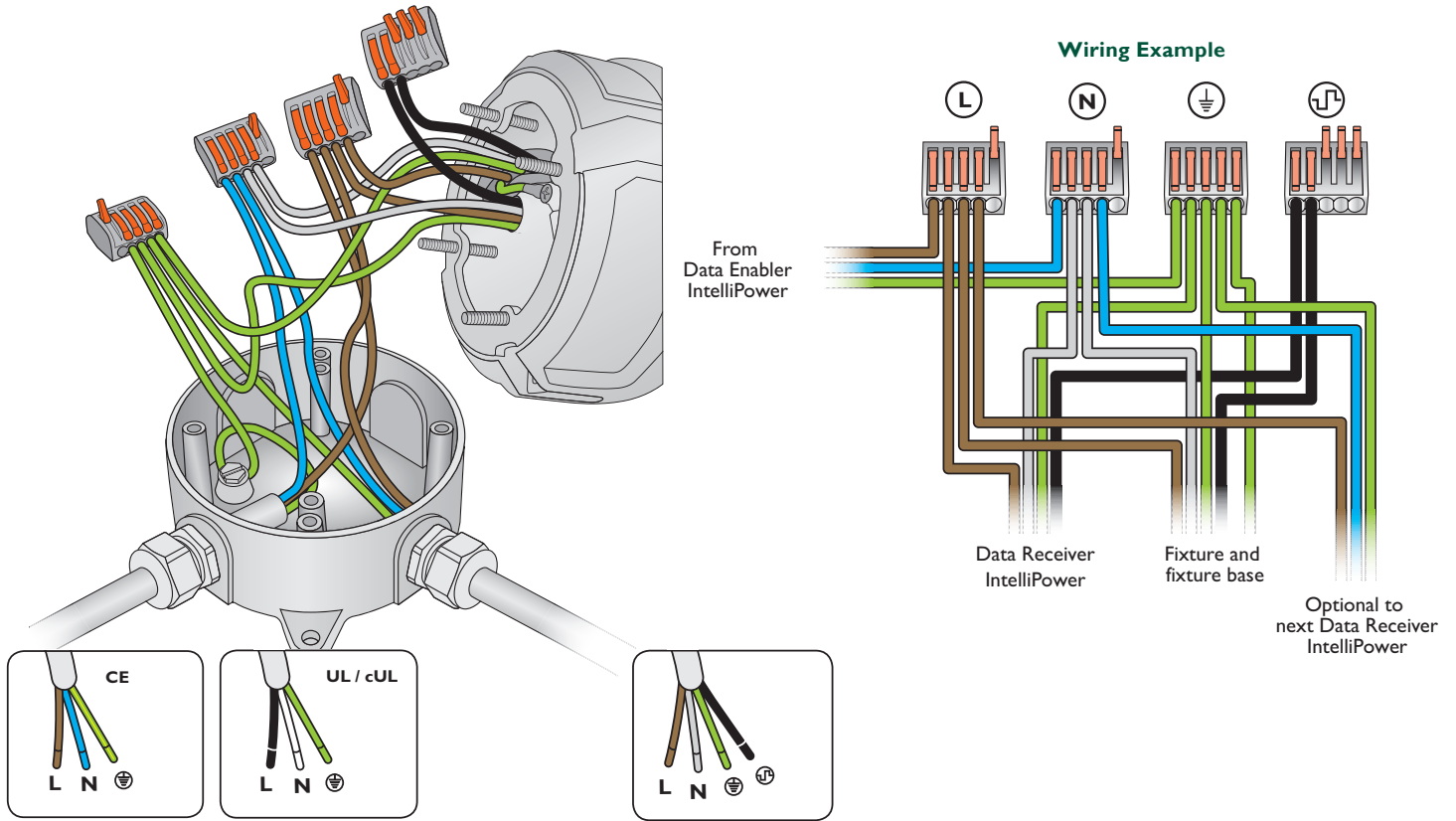
8. When dictated by local or state code or advised by a structural engineer, run a safety cable through the brackets on the Data Receiver IntelliPower and the Burst Powercore Landscape housings. Attach the safety cable to a secure anchor point using a method that follows the code or engineer's requirements.



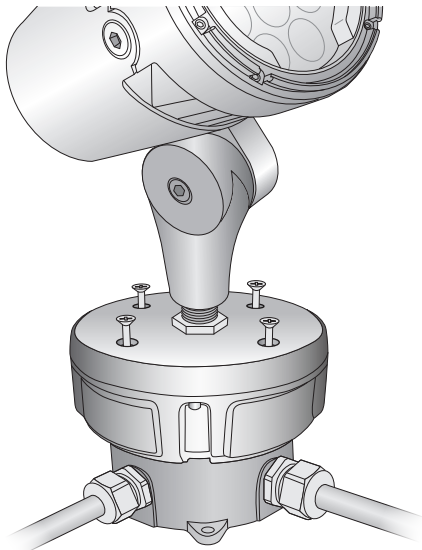
### Safety cable minimum requirements

Material	304 or 316 stainless steel
Size	5/32 in (4 mm) nominal diameter Minimum break load must be greater than 2,400 lb (1,089 kg)

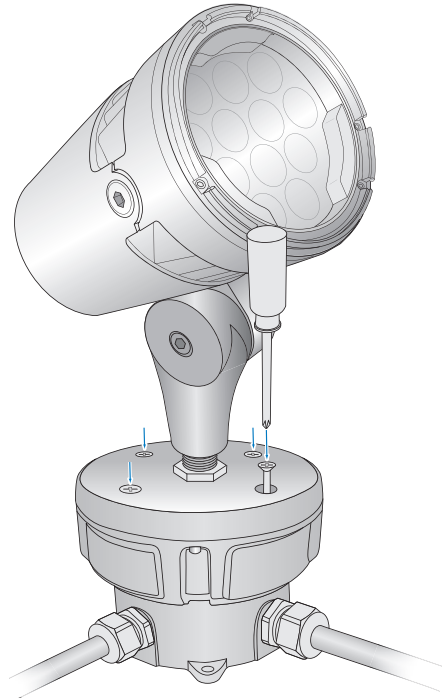
9. Wire the Data Receiver IntelliPower to the junction box or Wiring Compartment.



10. Align the screws in the fixture / Data Receiver IntelliPower assembly to the screw holes in the junction box or Wiring Compartment, taking care not to pinch the wires. As you push the assembly down, the screws push up.



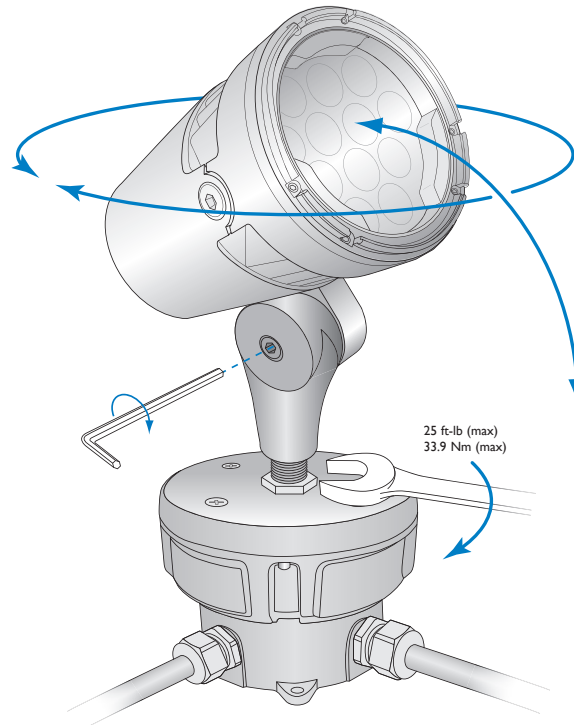
11. Tighten the screws down through the fixture / Data Receiver IntelliPower assembly and into the junction box.



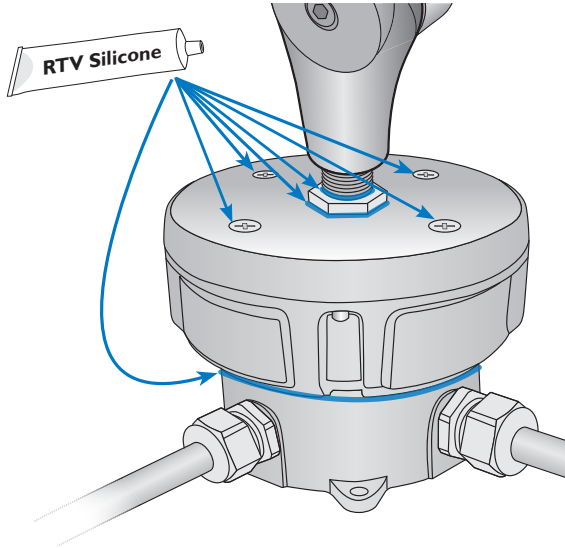
**\*** To aim fixtures properly, you may need to turn the power ON. Install all Burst Powercore Landscape fixtures and turn the power ON before tightening the fixture locking nuts.

12. Aim the fixture.

13. Using a 33 mm wrench, torque the locking nut to 25 ft-lb (33.9 Nm). Do not overtighten.



14. For installations in damp or wet environments, seal the screws and joints with electronics-grade RTV silicone.



15. Repeat steps 1 – 14 for additional Data Receiver IntelliPower devices, as needed.

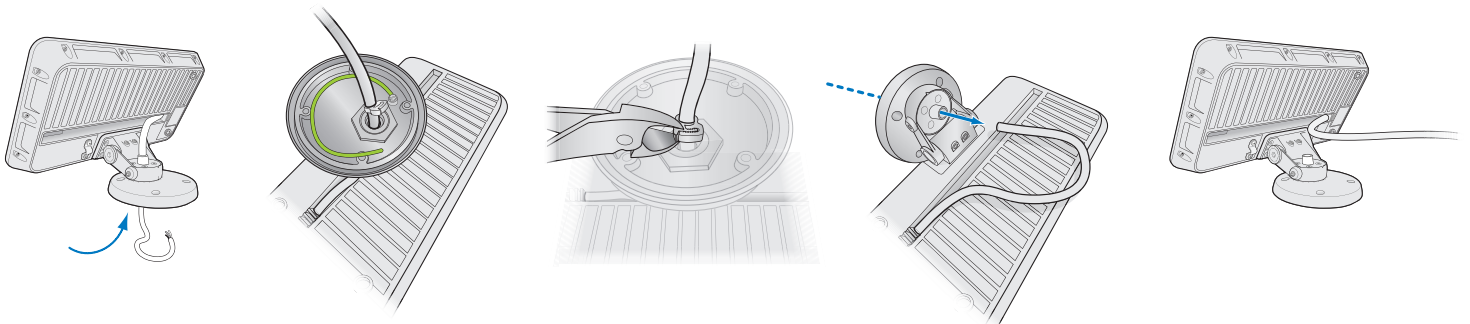
## Top-Mounting Blast Powercore Fixtures

ColorBlast Powercore and iW Blast Powercore feature a canopy base designed to mount to a standard US 4 in round junction box, a Wiring Compartment, or a Data Receiver IntelliPower device. When you top-mount a Blast Powercore fixture to a Data Receiver IntelliPower device, all power and data connections are made inside the junction box or Wiring Compartment.


Top-mounting may be desirable or required in retrofit situations where 2 + ground cable cannot be replaced, or where you cannot run new 3 + ground cable — for example, in historic buildings where existing wiring and mounting points must be used, or in exterior applications where existing wiring is underground or otherwise cost-prohibitive to access and replace.

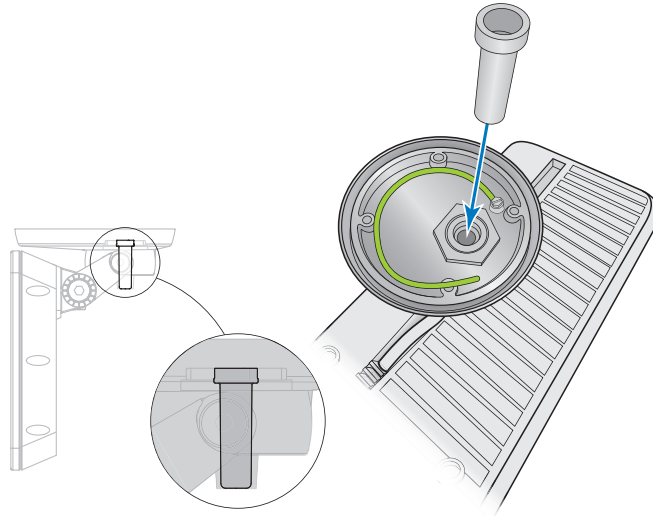
To top-mount a Blast Powercore Architectural fixture, you attach the fixture to the Data Receiver IntelliPower, then mount the assembly to an installed junction box or Wiring Compartment.

1. Follow steps 1 – 6 in “Begin Data Receiver IntelliPower Installation,” beginning on page 35.
2. Remove the nylon cable clamp from the fixture’s leader cable where it exits the underside of the canopy base, and pull the leader cable free of the canopy base.

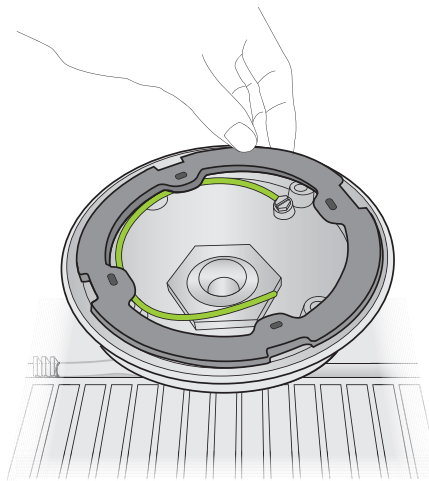


3. For installations in damp or wet environments, insert the included Blast Powercore canopy plug into the Blast Powercore canopy base.

 The Blast Powercore canopy plug may not fit in older versions of Blast Powercore.

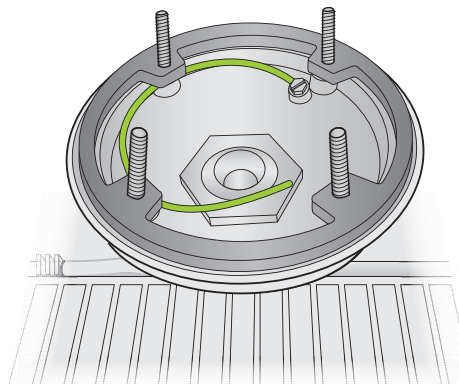


4. Seat an included gasket in the channel in the base of the Blast Powercore fixture. Line up the holes in gasket and with the screw holes in the fixture channel.

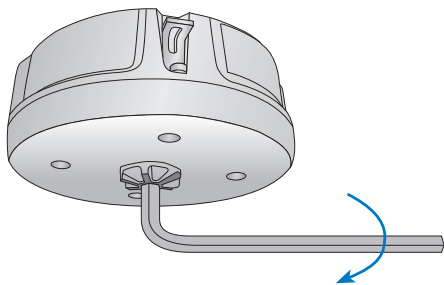


5. Push screws through the fixture's canopy base and the seated gasket.

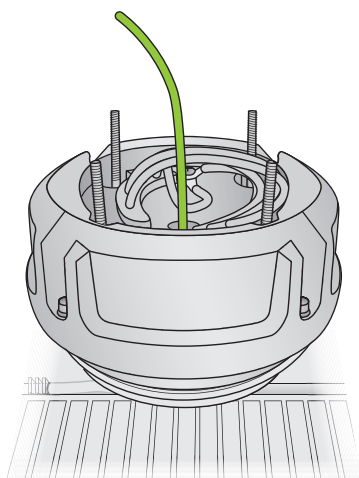
- For installations in dry locations, use the two included #8-32 x 3.5 in screws
- For installations in damp or wet locations, use the four included #10-24 x 3.5 in screws.



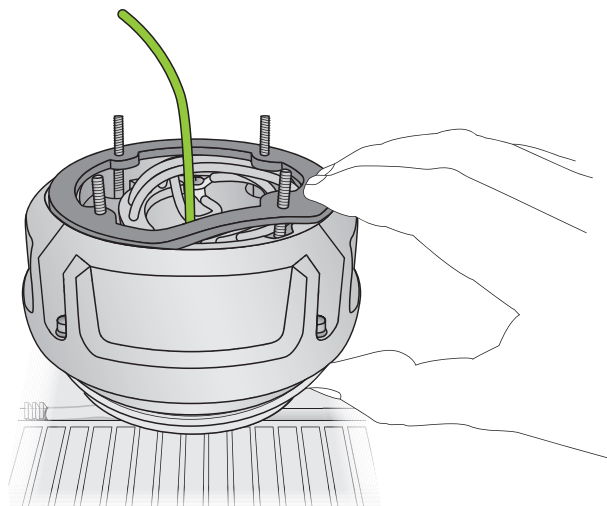
6. Remove the seal plug from the Data Receiver IntelliPower housing.



7. Insert the ground wire from the Blast Powercore fixture through the opening in the top of the Data Receiver IntelliPower. Align the Data Receiver IntelliPower over the screws and set it onto the fixture base, taking care not to pinch any wires or cables.



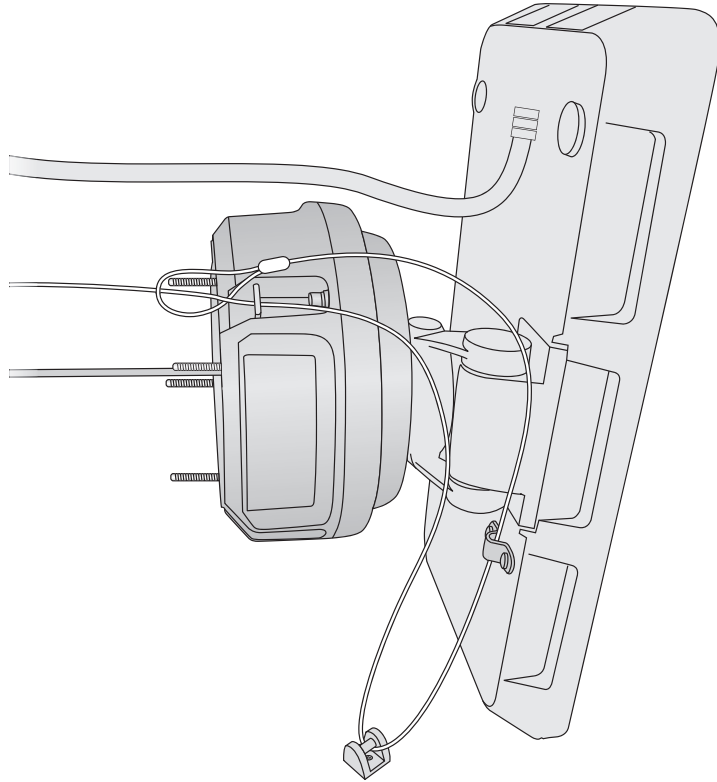
8. Slide an included gasket over the screws and seat it in the Data Receiver IntelliPower channel.



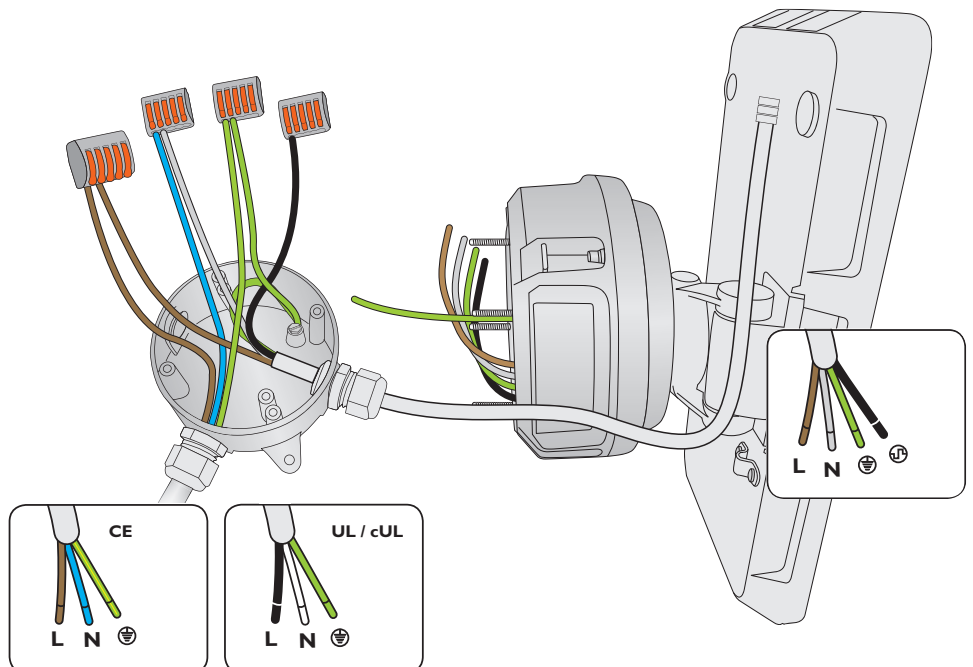
- When dictated by local or state code or advised by a structural engineer, run a safety cable through the brackets on the Data Receiver IntelliPower and the Blast Powercore housings. Attach the safety cable to a secure anchor point using a method that follows the code or engineer's requirements.

### Safety cable minimum requirements

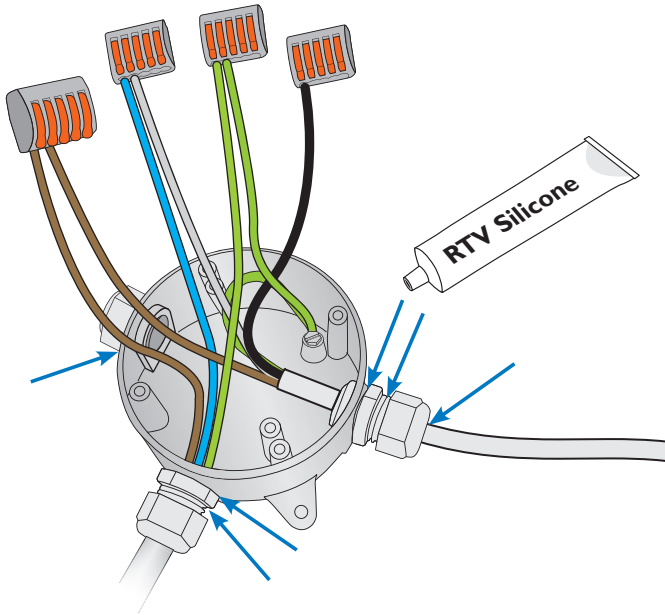
Material	304 or 316 stainless steel
Size	5/32 in (4 mm) nominal diameter Minimum break load must be greater than 2,400 lb (1,089 kg)



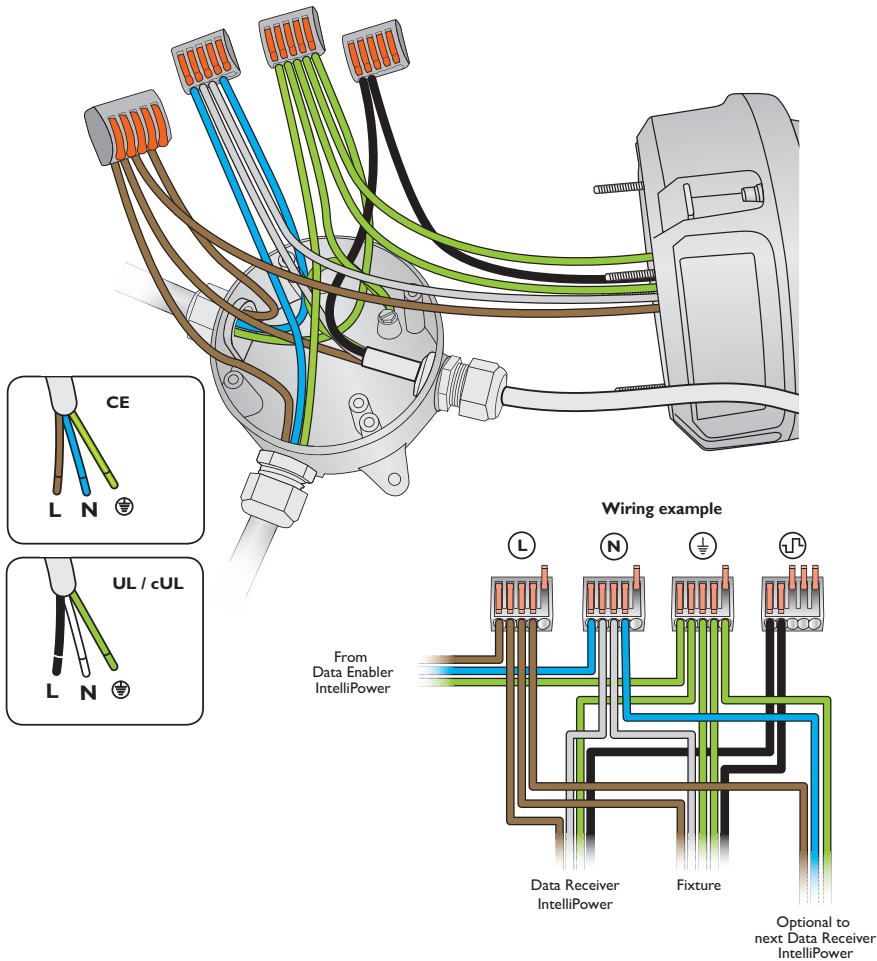
- Run the Blast Powercore integrated power / data cable through a port in the junction box or Wiring Compartment, using a cable connector rated for your application, and wire the Blast Powercore fixture to the junction box or Wiring Compartment



11. If installing in a wet or damp location, seal the cable connectors with electronics-grade RTV silicone.

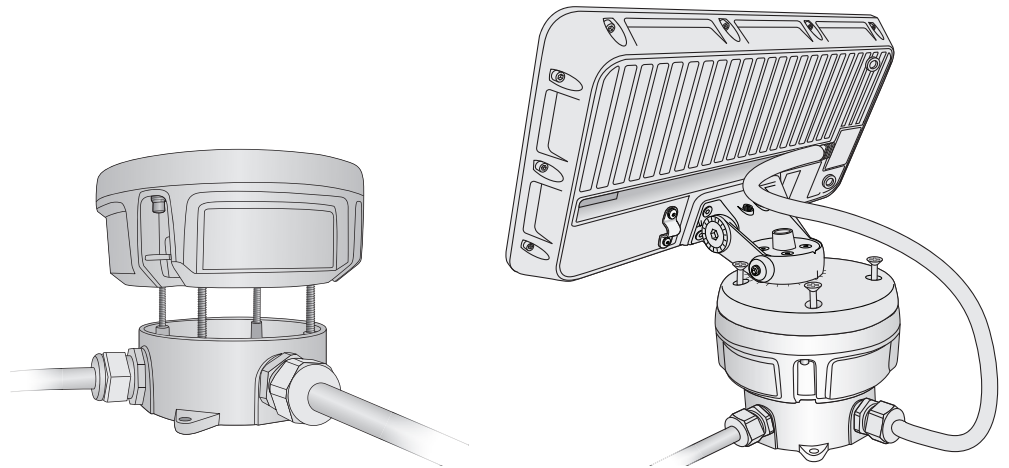


12. Wire the Data Receiver IntelliPower to the junction box, using available positions on the lever-style connectors for data, line, ground, and neutral.

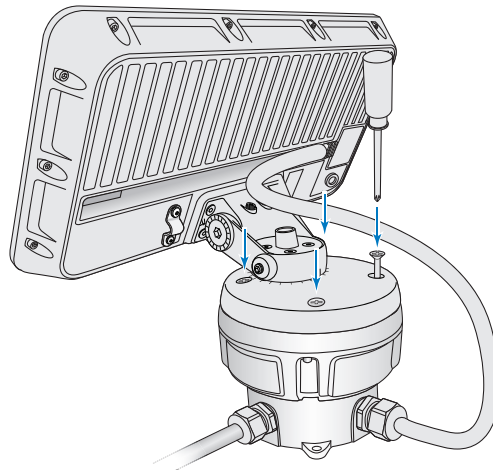




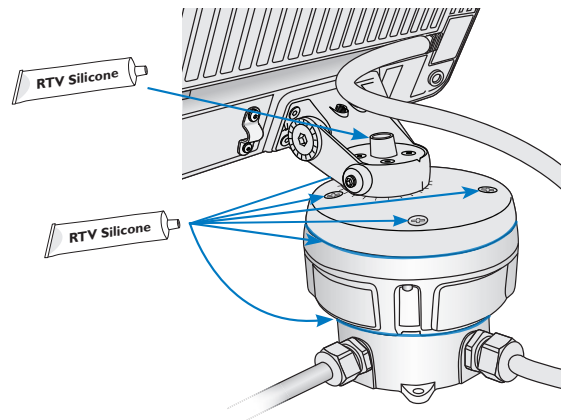
13. Align the screws in the fixture / Data Receiver IntelliPower assembly to the screw holes in the junction box or Wiring Compartment. As you push the assembly down, the screws push up.



14. Tighten the screws down through the fixture / Data Receiver IntelliPower assembly and into the junction box or Wiring Compartment.



15. For installations in damp or wet environments, seal the screws and joints with electronics-grade RTV silicone.

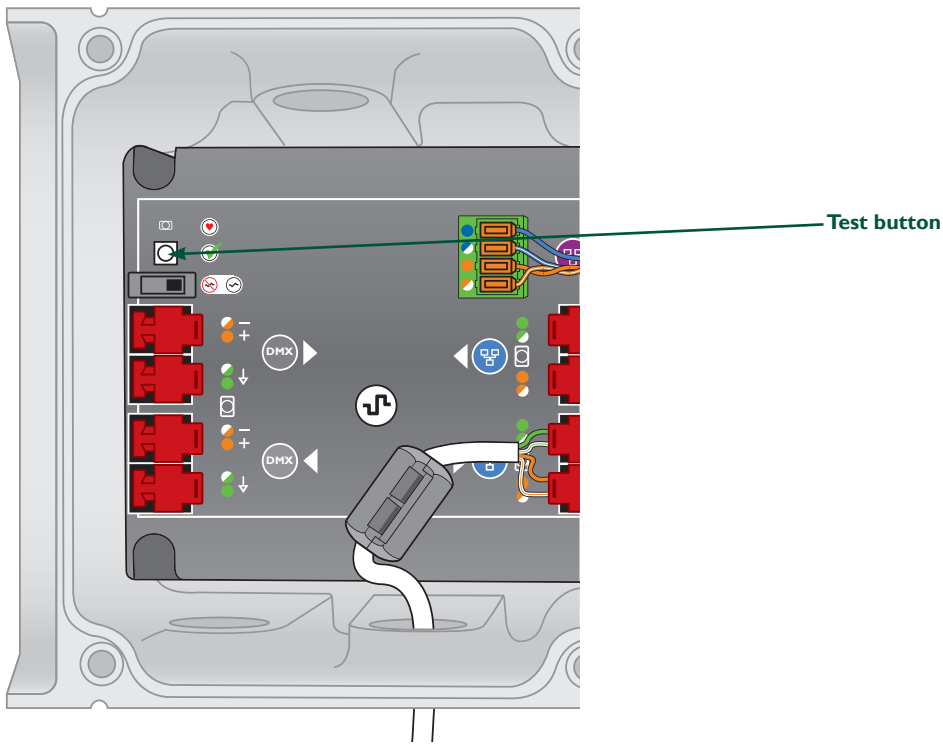


16. Repeat steps 1 – 15 for additional Data Receiver IntelliPower devices, as needed.


# Testing Connected Lights

For convenience in commissioning, a test button located inside the Data Enabler IntelliPower housing offers push-button verification that all connected lights are installed properly and receiving data.

1. Make sure all IntelliPower devices and intelligent Powercore fixtures are installed. The cover must be removed from the Data Enabler IntelliPower device on the branch to access the Test button.
2. Turn system power ON, and wait at least 10 seconds for the Data Enabler IntelliPower to fully start up.
3. Press the Test button inside the Data Enabler IntelliPower housing to play a Color Wash effect on all connected lights.



4. Visually verify that all connected lights are receiving power and data.,
5. Press the Test button a second time to end the system test.
6. If lights did not perform properly, make sure that IntelliPower devices and intelligent Powercore fixtures are installed and connected according to the instructions in this *Product Guide*. Inconsistent behavior toward the end of a run may indicate interference, or run lengths that exceed the capabilities of the configuration.
7. Once you have finished system testing and troubleshooting, secure the Data Enabler IntelliPower cover, as described on page 32.

 Consult with Philips Color Kinetics Applications Engineering or other qualified professionals for help troubleshooting power and data throughput issues.

# Configuring IntelliPower Devices with QuickPlay Pro

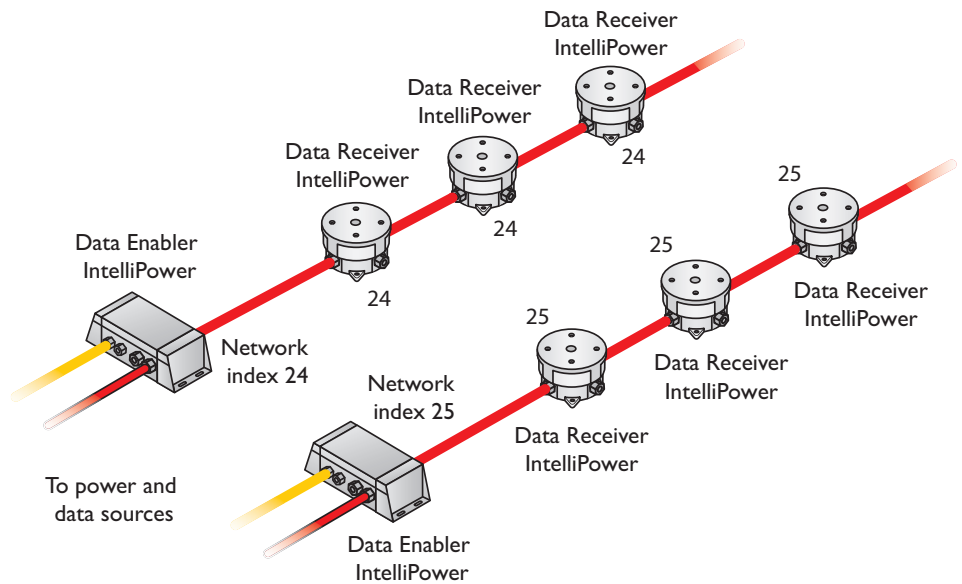
✳ You can download and install QuickPlay Pro for free from [www.philipscolorkinetics.com/support/downloads/](http://www.philipscolorkinetics.com/support/downloads/)

✳ Refer to “Planing an IntelliPower System” on page 10 for data and electrical configuration guidelines, recommendations, and best practices.

You configure Data Enabler IntelliPower and Data Receiver IntelliPower devices using QuickPlay Pro addressing and configuration software. With QuickPlay Pro, you can discover and manage all IntelliPower devices and intelligent Powercore lighting fixtures in your lighting network.

IntelliPower systems use *network indexes* to associate Data Enabler IntelliPower devices and Data Receiver IntelliPower devices, and to eliminate crosstalk and data collisions in installations with multiple electrical branches and multiple Data Enabler IntelliPower devices. You install one Data Enabler IntelliPower device and one or more Data Receiver IntelliPower devices per electrical branch, and assign a unique network index (from 1 to 100) to all of the IntelliPower devices on that branch.

For example, in the diagram below, all of the IntelliPower devices on Circuit 1 are assigned network index 24, while all of the IntelliPower devices on Circuit 2 are assigned network index 25. The Data Enabler IntelliPower device assigned to network index 24 communicates with all of the Data Receiver IntelliPower devices also assigned to network index 24, while the Data Enabler IntelliPower device assigned to network index 25 communicates with all of the Data Receiver IntelliPower devices also assigned to network index 25.



Once your IntelliPower system is configured properly, you can use QuickPlay Pro to discover, address, and configure all intelligent Powercore fixtures installed on both circuits, and control them as a single system using a DMX or Ethernet lighting controller, such as Light System Manager or iPlayer 3.

For proper operation, the network index assignments of IntelliPower devices must match the physical layout of your IntelliPower system. For complex installations, we recommend using a lighting plan or layout map that identifies the location, connections, and IP addresses of all IntelliPower devices and intelligent Powercore LED lighting fixtures.

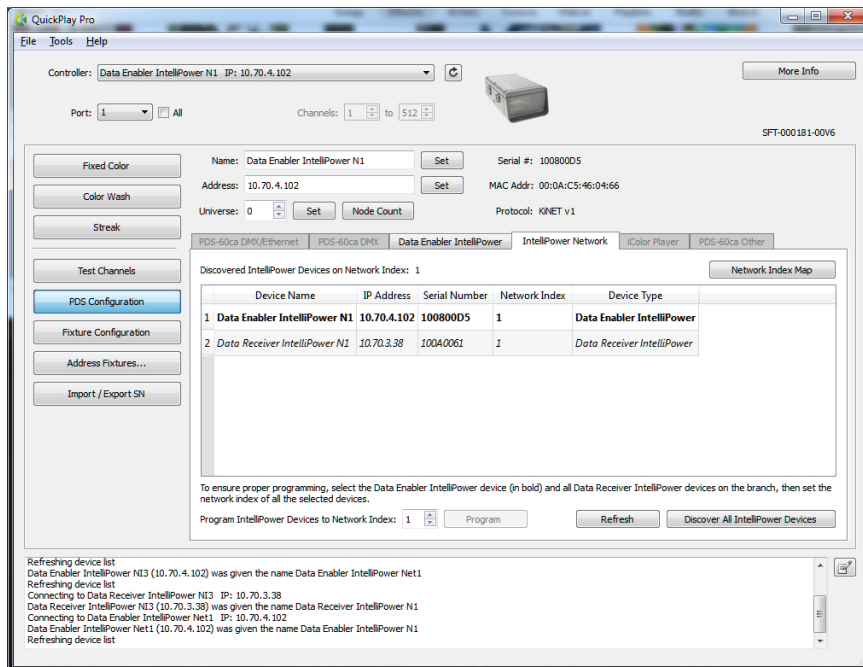
## Configuring a New IntelliPower System

Make sure you install and verify the proper wiring of all IntelliPower devices and intelligent Powercore LED lighting fixtures before discovering and configuring devices with QuickPlay Pro. Because all IntelliPower devices are programmed to network index 1 by default, we recommend configuring each branch of the system individually, to avoid networking conflicts and unexpected behavior.

1. Connect a computer running QuickPlay Pro to the IntelliPower network:
  - In an Ethernet environment, connect the computer to an available port on the Ethernet switch in the IntelliPower network.
  - If you're using DMX control, connect the computer to the CAT 5e "tail" installed on the Data Enabler IntelliPower on the branch you want to configure.
2. Turn power ON to the branch you want to configure (and turn power OFF to all other branches).
3. Make sure the computer's IP address is set within the 10.x.x.x range, and that its subnet mask is set to 255.0.0.0.
4. Run QuickPlay Pro. QuickPlay Pro automatically lists all IntelliPower devices on the branch, by name and IP address, in the Controller drop-down list.
5. Select the Data Enabler Pro device from the Controller drop-down list.
6. Click PDS Configuration. The Data Enabler IntelliPower device on the branch, and all other IntelliPower devices assigned to the same network index, appear in the IntelliPower Network tab. (In a new installation, all devices should be set to network index 1 by default.)

✳ Refer to the Product Guides for the intelligent Powercore fixtures in your installation for complete installation and configuration information.

✳ Refer to page 30 for information on installing a CAT 5e "tail." If the Data Enabler IntelliPower device does not have a tail, you must remove the cover and connect the computer directly to the Ethernet Data In port.



6. In IntelliPower installations with many IntelliPower devices, we recommend assigning a meaningful name to each device in order to streamline configuration, maintenance, and troubleshooting. For instance, you might name a device with a location that corresponds to a position on your lighting plan, or with a suffix that indicates which network index is supposed to be assigned to the device.

To rename IntelliPower devices:

- Select the device from the Controller drop-down list.
- In the Name textbox, enter a new name of up to 30 characters and click Set.
- Repeat for each IntelliPower device you want to rename.

✳️ Be careful to assign all Data Receiver IntelliPower devices on the same branch to the same network index as the discovered Data Enabler IntelliPower device on that branch. Refer to “Resolving IntelliPower Configuration Issues” below for details on what to do if you accidentally assign a Data Receiver IntelliPower to a network index to which no Data Enabler IntelliPower is assigned.

✳️ If Data Enabler IntelliPower devices are connected in series using the DMX Data In and Data Out ports, instead of the Ethernet Data In and Data Out ports as recommended, you must remove the cover of each Data Enabler IntelliPower device in the installation in turn, connecting your computer directly to each device’s Ethernet Data In port.

✳️ Refer to page 29 for information on installing a CAT 5e “tail.” If the Data Enabler IntelliPower device does not have a tail, you must remove the cover and connect the computer directly to the Ethernet Data In port.

7. If your IntelliPower network consists of multiple branches, assign the discovered IntelliPower devices to any network index other than 1:
  - On the IntelliPower Network tab, select the Data Enabler IntelliPower device and all Data Receiver IntelliPower devices on the same branch.
  - In the Program IntelliPower Devices to Network Index control to the left of the Program button, select a network index other than 1.
  - Click Program.
  - Repeat for each IntelliPower device you want to rename.

A status bar appears while all IntelliPower devices on the branch are being programmed to the new network index. This may take several minutes.
8. Configure the next branch in your IntelliPower system:
  - Turn power OFF to the branch you just configured.
  - Turn power ON to the branch you want to configure.
  - Repeat steps 5 – 7, assigning the new set of IntelliPower devices to an unused network index.
9. Continue configuring branches as needed, assigning each new set of IntelliPower devices to an unused network index.

### Resolving IntelliPower Configuration Issues

To ensure proper programming and system operation, each Data Enabler IntelliPower device must be assigned to a unique network index, and each Data Receiver IntelliPower device on a branch must be assigned to the same network index as the Data Enabler IntelliPower device on that branch.

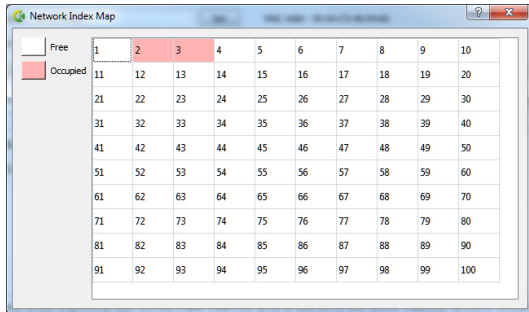
IntelliPower configuration issues can occur when:

- Multiple Data Enabler IntelliPower devices are assigned to the same network index. This can affect communications and produce inconsistent results.
- Data Receiver IntelliPower devices are assigned to network indexes to which no Data Enabler IntelliPower device is assigned. Such Data Receiver IntelliPower devices will receive no lighting control data, and any lighting fixtures connected to them will not work properly.
- The network index assignments of IntelliPower devices do not match the physical layout of the IntelliPower lighting system. Data integrity can be compromised when Data Enabler IntelliPower devices attempt to transmit data to Data Receiver IntelliPower devices on other electrical branches. Also, successful discovery, addressing, and configuration of connected lighting fixtures depends on the proper configuration of the IntelliPower devices to which the fixtures are connected.

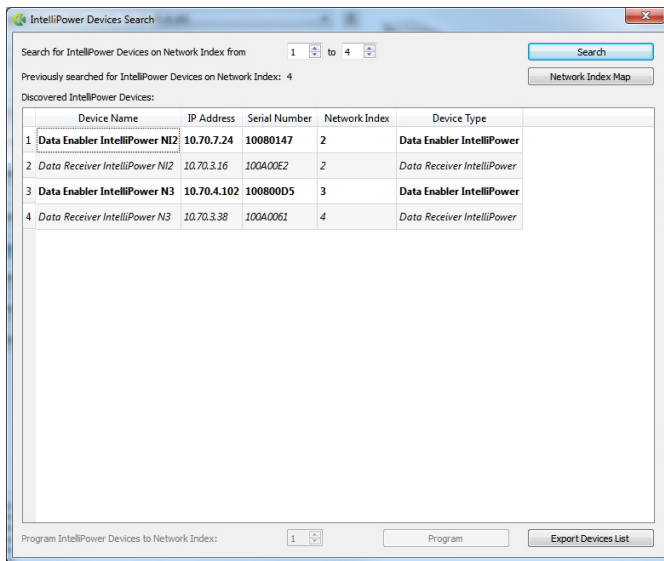
In an Ethernet environment, QuickPlay Pro offers several methods of viewing the entire IntelliPower system and reassigning the network indexes of IntelliPower devices to easily resolve configuration issues. If your IntelliPower system is complex, with multiple branches, refer to the system’s lighting map or layout plan to verify the locations and physical connections of each IntelliPower device.

1. Turn power ON to all branch circuits.
2. Connect a computer running QuickPlay Pro to the IntelliPower network:
  - In an Ethernet environment, connect the computer to an available port on the Ethernet switch in the IntelliPower network.
  - In a DMX network, connect the computer to the CAT 5e “tail” installed on the Data Enabler IntelliPower device on the branch you want to configure.

- Run QuickPlay Pro.
- Click PDS Configuration.
- To discover which network indexes have Data Enabler IntelliPower devices assigned to them, click Network Index Map. These networks appear shaded in light red. (Click the Close button in the upper right corner to close the Network Index Map window.)



- Click Discover All IntelliPower Devices. To search consecutive network indexes, select a range using the Search for IntelliPower Devices controls at the top of the IntelliPower Devices Search window, and click Search. IntelliPower searches for all devices assigned to all network indexes in the range, and displays them in Discovered IntelliPower Devices list. (Discovery of devices on many network indexes may take several minutes to complete.)



✳ Click Network Index Map from within the IntelliPower Devices Search window to see which networks have assigned devices.

You can perform multiple searches to discover devices on individual network indexes, or in discontinuous ranges. All newly discovered devices are added to the list, and sorted by network index.

- Select all IntelliPower devices that you want to assign to the same network index.
- Use the Program IntelliPower Devices to Network Index control at the bottom of the window to select the network index (1 – 100) to which you want to assign the selected devices. (Be careful not to assign more than one Data Enabler IntelliPower device to the same network index, and be careful to select only Data Receiver IntelliPower devices that are on the same branch as the selected Data Enabler IntelliPower device.)
- Click Program.

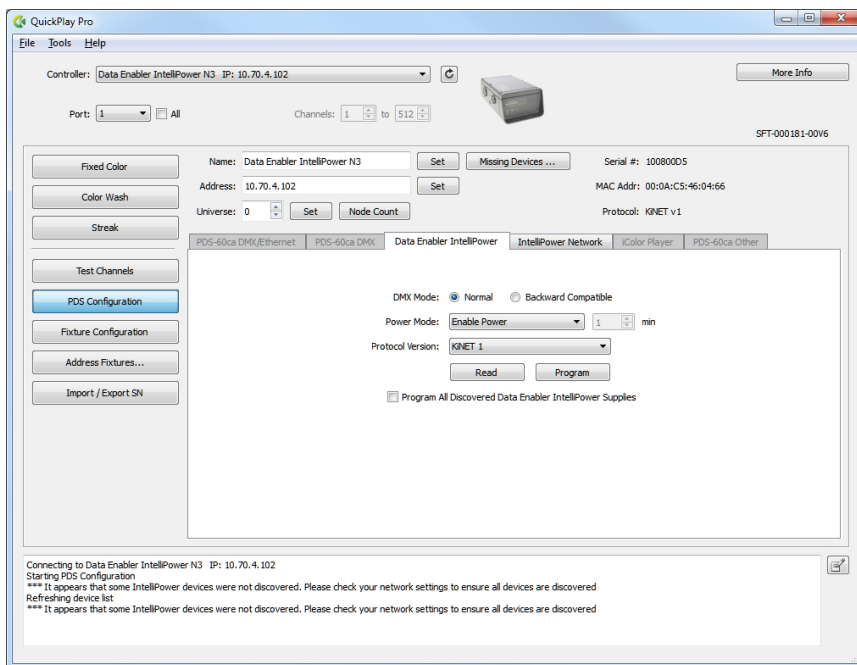
✳ Click Export Devices List to export the currently displayed list of IntelliPower devices to a comma-separated values (.csv) file. The file lists IntelliPower devices by name, IP address, serial number, network index, and device type.

10. Repeat steps 7 – 9 until all IntelliPower devices are assigned to the correct network indexes.
11. Click the Close box in the upper right corner of the IntelliPower Devices Search window.

### Setting Data Enabler IntelliPower Power Mode

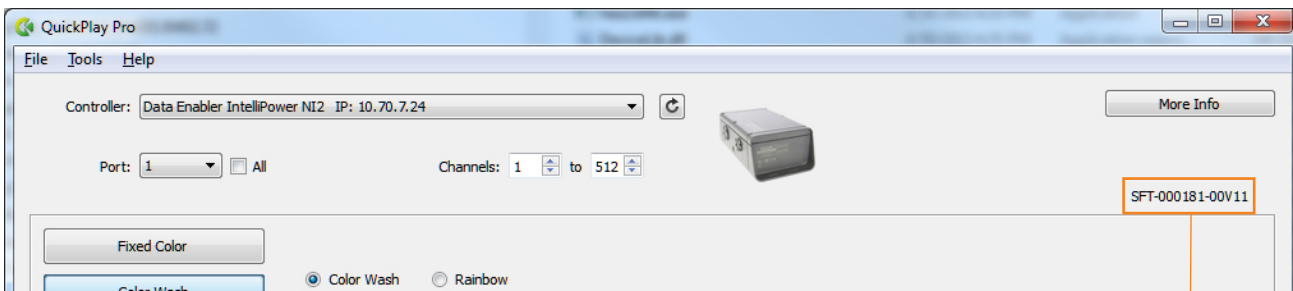
To maximize energy efficiency, optional power-saving modes automatically cut power to connected Data Receiver IntelliPower devices and lighting fixtures when lights are off for a configurable number of minutes. Use the Power Mode drop-down list to set Data Enabler IntelliPower power mode.

1. Select a Data Enabler IntelliPower device from the Controller drop-down list.
2. Click PDS Configuration.
3. Click the Data Enabler IntelliPower tab.



4. Select a power mode from the Power Mode drop-down list:
  - To send power to connected Data Receiver IntelliPower devices and lighting fixtures at all times, select Enable Power (the default). (Lights continue to draw power even when receiving no data or black data.)
  - To cut power to connected Data Receiver IntelliPower devices and lighting fixtures at all times, select Disable Power. (Lights remain off even when receiving non-black data.)
  - To cut power to connected Data Receiver IntelliPower devices and lighting fixtures after receiving no data for a period of time, select "Turn off after no data for," and enter a timeout (in minutes) in the text box. Power is automatically restored to connected lights when data flows again.
  - To cut power to connected Data Receiver IntelliPower devices and lighting fixtures after receiving black data (DMX packets with all data fields set to 0) for a period of time, select "Turn off after black data for," and enter a timeout (in minutes) in the text box. Power is automatically restored to connected lights when non-black data flows again.

\* Refer to page 29 for information on installing a CAT 5e “tail.” If the Data Enabler IntelliPower device does not have a tail, you must remove the cover and connect the computer directly to the Ethernet Data In port.



Firmware version

\* Data Enabler IntelliPower and Data Receiver IntelliPower devices use the same firmware.

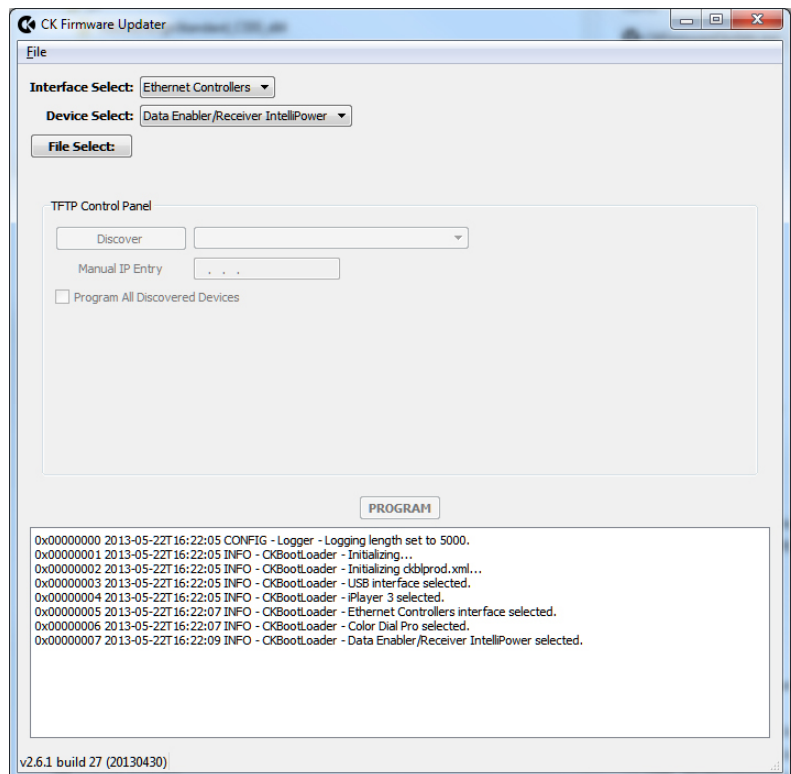


# Updating IntelliPower Firmware

The IntelliPower firmware image is periodically updated to improve system performance and functionality. To maximize system performance, make sure your IntelliPower devices are running the most recent version of the firmware. We recommend that you confirm that your IntelliPower devices have the most recent version of the firmware before installing them in your lighting network.

## Determine IntelliPower Firmware Version

1. Turn power ON to all IntelliPower network branches containing the Data Enabler IntelliPower and Data Receiver IntelliPower devices you want to update.
2. Connect a computer with QuickPlay Pro installed to the IntelliPower network:
  - In an Ethernet environment, connect the computer to an available port on the Ethernet switch in the IntelliPower network.



- If you're using DMX control, connect the computer to the CAT 5e "tail" installed on the Data Enabler IntelliPower on the branch you want to configure.
3. Run QuickPlay Pro.
  4. Select a Data Enabler IntelliPower or Data Receiver IntelliPower device from the Controllers drop-down list.

The firmware version for the selected IntelliPower device appears near the top of the QuickPlay Pro window, on the right.

5. Repeat step 4 as needed.

## Download IntelliPower Firmware

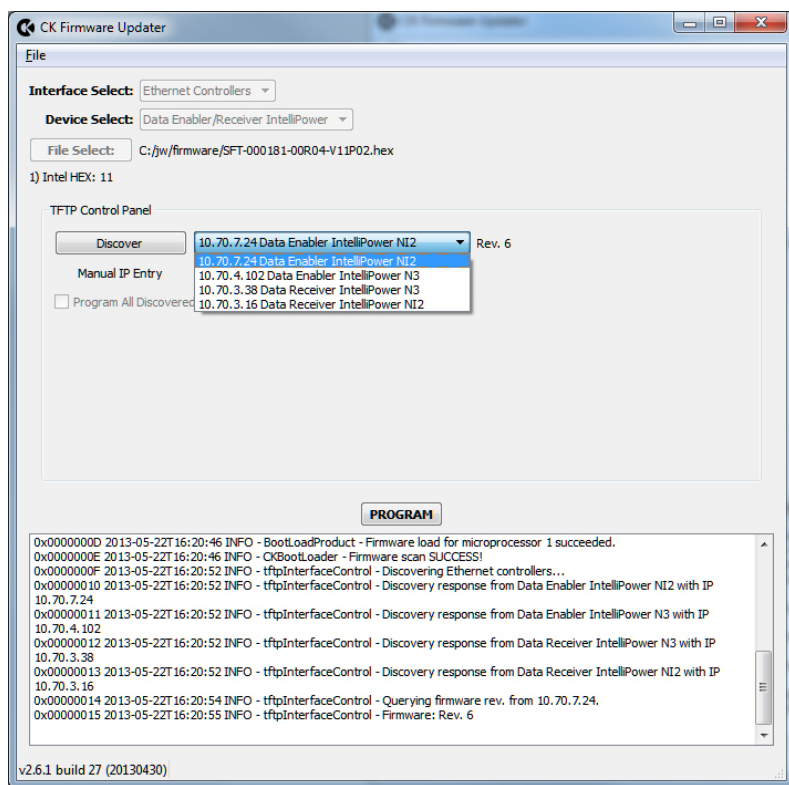
If a more recent version of the IntelliPower firmware is available, download the firmware file (.hex extension).

1. Visit the Firmware Updater page at [www.philipscolorkinetics.com/support/](http://www.philipscolorkinetics.com/support/)

downloads/firmware/ to check for the latest firmware version.

2. If a newer firmware image is available, click the link on the Firmware Updater page to download the firmware file to an accessible location on your computer.

## Download CK Firmware Updater



To update the firmware image on an IntelliPower device, you must download and install the CK Firmware Updater application on your computer.

1. Visit the Firmware Updater page at [www.philipscolorkinetics.com/support/downloads/firmware/](http://www.philipscolorkinetics.com/support/downloads/firmware/)
2. Download the CK Firmware Updater installer.
3. Decompress the file to an accessible location on your computer and open it.
4. Run the installer, and follow the on-screen instructions.

## Running an IntelliPower Firmware Update

1. Turn power ON to all IntelliPower network branches containing the Data Enabler IntelliPower and Data Receiver IntelliPower devices you want to update.
2. Connect a computer with CK Firmware Updater installed on it to the IntelliPower network:
  - In an Ethernet environment, connect the computer to an available port on the Ethernet switch in the IntelliPower network.
  - In a DMX network, connect the computer to the CAT 5e “tail” installed on the Data Enabler IntelliPower device on the branch you want to configure.
3. Run CK Firmware Updater.
4. From the Interface Select drop-down list, select Ethernet Controllers.
5. From Device Select drop-down list, select Data Enabler / Receiver IntelliPower.

6. Click File Select, navigate to the folder to which you downloaded the firmware file (.hex extension), and click Open.
7. Click Discover. CK Firmware Updater automatically discovers all IntelliPower devices connected to the IntelliPower network.

8. Select an IntelliPower device and click PROGRAM. Repeat for each additional IntelliPower device that you want to update.
9. Close CK Firmware Updater by clicking the close box in the upper right corner of the window.

### Recovering from Firmware Update Errors

In rare instances, you may experience power or data loss or interruption during the firmware update process. In such cases, an IntelliPower device may receive an incomplete or corrupt firmware image. You must successfully re-install the firmware image to restore normal IntelliPower operations.

- In the case of power loss or interruption, the IntelliPower device retains its assigned IP address, but you are temporarily unable to communicate with the device using that address.

If this happens, enter the reserved IP address 10.1.250.250 in CK Firmware Updater, and re-install the firmware image.

Once the firmware image is successfully installed, you can again communicate with the IntelliPower device using its assigned IP address.

- In the case of data loss or interruption, you must manually enter the device's IP address in CK Firmware Updater to re-install the firmware image.

If you don't know the device's assigned IP address, you can cycle power, then use the reserved IP address 10.1.250.250, as described above.



Philips Color Kinetics  
3 Burlington Woods Drive  
Burlington, Massachusetts 01803 USA  
Tel 888.385.5742  
Tel 617.423.9999  
Fax 617.423.9998  
[www.philipscolorkinetics.com](http://www.philipscolorkinetics.com)

Copyright © 2014 Philips Solid-State Lighting Solutions, Inc. All rights reserved.  
Chromacore, Chromasic, CK, the CK logo, Color Kinetics, the Color Kinetics logo, ColorBlast, ColorBlaze, ColorBurst, eW Fuse, ColorGraze, ColorPlay, ColorReach, iW Reach, eW Reach, DIMand, EssentialWhite, eW, iColor, iColor Cove, IntelliWhite, iW, iPlayer, Optibin, and Powercore are either registered trademarks or trademarks of Philips Solid-State Lighting Solutions, Inc. in the United States and / or other countries. All other brand or product names are trademarks or registered trademarks of their respective owners. Due to continuous improvements and innovations, specifications may change without notice.  
Cover Photo: Belfast City Hall, Belfast, Northern Ireland,  
by Peter Byrne, Peter Byrne Photography Ltd.

DAS-000108-00 R01 02-14