iW Graze Powercore

Linear exterior LED wall grazing fixture with intelligent white light

PHILIPS

COLOR KINETICS

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Linear exterior LED wall grazing fixture with intelligent white light

iW Graze Powercore linear LED fixtures are optimized for surface grazing, wash lighting, and efficient signage illumination. iW Graze Powercore fixtures combine channels of cool and warm white LEDs to offer color temperatures ranging from 2700 K – 6500 K. With the operational efficiency and cost-effectiveness of Powercore technology, and a low-profile multi-positional housing, iW Graze Powercore offers both superior performance and simple installation.

- Integrates patented Powercore technology — Powercore technology rapidly, efficiently, and accurately controls power output to iW Graze Powercore fixtures directly from line voltage. The Philips Color Kinetics Data Enabler Pro merges line voltage and control data and delivers them to the fixture over a single standard cable, dramatically simplifying installation and lowering total system cost.

- Tailor light output to specific applications — Available in 1 ft (305 mm), 2 ft (610 mm), 3 ft (914 mm), and 4 ft (1219 mm) lengths, with 10° x 60° and 30° x 60° beam angle options. Superior beam quality offers uniform beam saturation as close as 6 in (152 mm), and a wide horizontal beam angle allows a range of fixture spacing options.

- Versatile installation options — Constant-torque locking hinges offer simple and consistent position control from various angles. The space-efficient, low-profile aluminum housing accommodates placement within most architectural niches.

- Supports new applications for white light — Long useful source life significantly reduces or eliminates maintenance situations in which lamp maintenance may be difficult or impossible.

- Industry-leading controls — iW Graze Powercore works seamlessly with the complete line of Philips controllers, including Light System Manager, iPlayer 3, and ColorDial Pro, as well as third-party controllers.

- Universal power input range — iW Graze Powercore accepts power input of 100 to 240 VAC, allowing consistent installation in any location around the world. Depending on input voltage, a single Data Enabler Pro can support up to 56 iW Graze Powercore fixtures in a single run.

Outdoor Rated
With an extruded, anodized aluminum housing fully sealed for maximum fixture life and IP66-rated for outdoor applications, iW Graze Powercore is ideal for use in damp or wet locations.

Warm Color Temperature

Cool Color Temperature

Versatile Installation Options

iW Graze Powercore is designed for grazing and wall washing applications which require variable brightness and color temperature. With a low-profile design, exterior-rated housing, LED sources with long useful life, and ease of installation and maintenance, iW Graze Powercore is ideal for interior and exterior installations where lamp maintenance may be difficult or impossible.

How Different Color Temperatures Affect the Appearance of Objects

Adjusting the brightness and color temperature of iW Graze Powercore fixtures, from warm (more yellow and red) to cool (more blue), alters the emotional effect of a space, and can dramatically affect the appearance of objects on displays in stores, galleries, and museums. Selecting the right color temperature matches light source to environment, positively influences buyer behavior, and increases productivity in the workplace.

### Typical iW Graze Powercore Installations

Thanks to patented Powercore technology, Data Enabler Pro delivers line voltage and control data to iW Graze Powercore fixtures over a single standard wire, eliminating the need for external power supplies,

A simple iW Graze Powercore installation might use a single series of fixtures with one Data Enabler Pro and ColorDial Pro to wash the walls in an office entryway with uniform, surface wash light that reflects a glare-free ambient glow into the surrounding area. A more complex installation might use multiple series of iW Graze Powercore fixtures, with multiple Data Enabler Pro devices, mounted in within compact niches of a building exterior for dramatic highlighting of notable architectural features.

Regardless of the size and complexity of your installation, planning up front can help streamline the installation and configuration of your fixtures.

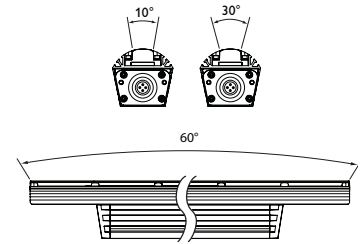Create a lighting design plan that identifies and locates all fixtures, power / data supplies, and controllers. Use this Product Guide and the online Configuration Calculator to determine whether to install fixtures in series or in parallel, how many fixtures you can install in a single series, and the maximum distances between Data Enabler Pro devices, fixtures, and controllers.

Power over Ethernet Switch

ColorDial Pro

Data Enabler Pro

ColorGraze Powercore
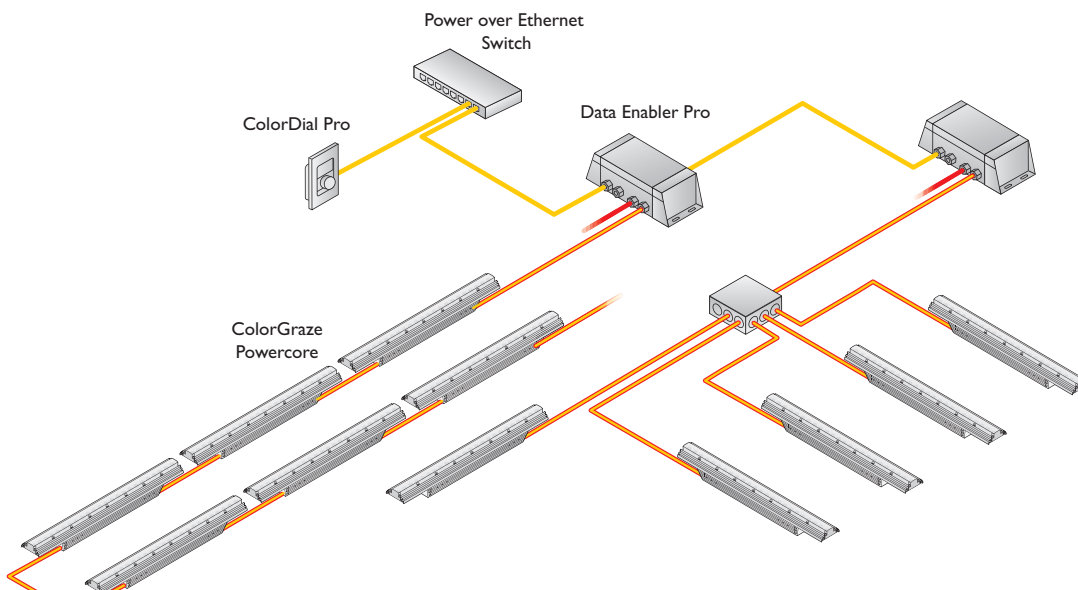
Specifications

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

Item	Specification	1 ft (305 mm)	2 ft (610 mm)	3 ft (914 mm)	4 ft (1219 mm)
Output	Beam Angle	10° x 60° / 30° x 60°			
	Color Temperature*	2700 K – 6500 K			
	Lumens†	557 (10° x 60°) 511 (30° x 60°)			
	Efficacy (lm / W)	24.6 (10° x 60°) 22.4 (30° x 60°)			
	Lumen Maintenance‡	50,000 hours L$_{50}$ @ 25° C *(typical application)*			
Electrical	Input Voltage	100 – 240 VAC, auto-switching, 50 / 60 Hz			
	Power Consumption *max. at full output, steady state*	17.5 W	35 W	52.5 W	70 W
Control	Interface	Data Enabler Pro (DMX / Ethernet) Fixture firmware addressable 8- or 16-bit control			
Physical	Dimensions *(Height x Width x Depth)*	2.7 x 12 x 2.8 in (69 x 305 x 71 mm)	2.7 x 24 x 2.8 in (69 x 610 x 71 mm)	2.7 x 36 x 2.8 in (69 x 914 x 71 mm)	2.7 x 48 x 2.8 in (69 x 1219 x 71 mm)
	Weight	1.99 lb (0.9 kg)	4.9 lb (2.2 kg)	8.1 lb (3.6 kg)	10.8 lb (4.9 kg)
	Housing	Extruded anodized aluminum			
	Lens	Clear polycarbonate with holographic film diffuser			
	Fixture Connectors	Integral male / female waterproof connectors			
	Mounting	Multi-positional, constant torque locking hinges			
	Temperature Ranges	-40° – 122° F (-40° – 50° C) Operating -4° – 122° F (-20° – 50° C) Startup -40° – 176° F (-40° – 80° C) Storage			
	Humidity	0 – 95%, non-condensing			
	Maximum Fixture Run Lengths§	37 @ 100 VAC 43 @ 120 VAC 56 @ 220 – 240 VAC	*Configuration: 2 ft (610 mm) fixtures installed end-to-end, 20 A circuit, standard 50 ft (15.2 m) Leader Cable*		
Certification and Safety	Certification	UL / cUL, FCC Class A, CE, C-Tick			
	Environment	Dry / Damp / Wet Location, IP66			

10°   30°

60°

❋ *To calculate the number of fixtures your specific installation can support, download the Configuration Calculator from www.philipscolorkinetics.com/support/install_tool/*

* Color temperatures conform to nominal CCTs as defined in ANSI Chromaticity Standard C78.377A.

† Lumen measurement complies with IES LM-79-08 testing procedures.

‡ L$_{70}$ = 70% lumen maintenance (when light output drops below 70% of initial output). L$_{50}$ = 50% lumen maintenance (when light output drops below 50% of initial output). Ambient luminaire temperatures specified. Lumen maintenance calculations are based on lifetime prediction graphs supplied by LED source manufacturers. Calculations for white-light LED fixtures are based on measurements that comply with IES LM-80-08 testing procedures. Refer to www.philipscolorkinetics.com/support/appnotes/ for more information.

§ These figures, provided as a guideline, are accurate for this configuration only. Changing the configuration can affect the run lengths.
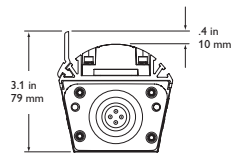
CHROMACORE® | OPTIBIN® | POWERCORE®
CK TECHNOLOGY | CK TECHNOLOGY | CK TECHNOLOGY
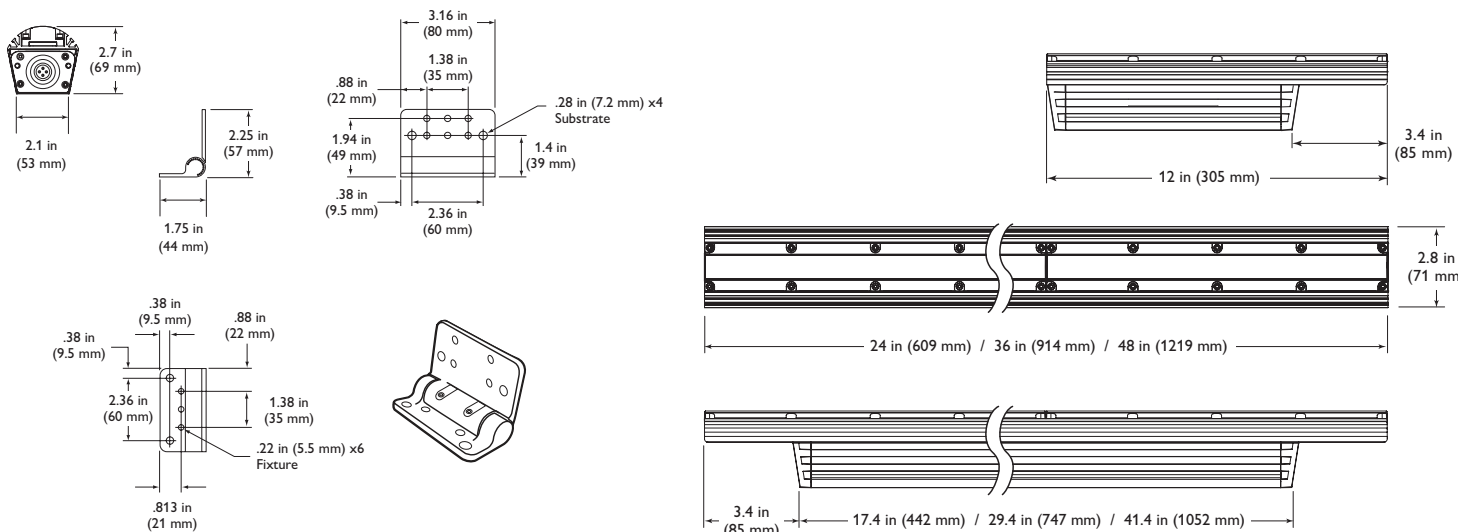
Fixtures and Accessories

Item	Type		Item Number	Philips 12NC
iW Graze Powercore	10° x 60° beam angle	1 ft (305 mm)	523-000053-04	910503700956
		2 ft (610 mm)	523-000053-05	910503700957
		3 ft (914 mm)	523-000053-06	910503700958
		4 ft (1219 mm)	523-000053-07	910503700959
	30° x 60° beam angle	1 ft (305 mm)	523-000053-12	910503700964
		2 ft (610 mm)	523-000053-13	910503700965
		3 ft (914 mm)	523-000053-14	910503700966
		4 ft (1219 mm)	523-000053-15	910503700967
Leader Cable	UL / cUL	50 ft (15.2 m)	108-000042-00	910503700322
	CE		108-000042-01	910503700323
Jumper Cable	UL / cUL	End-to-end	108-000039-00	910503700314
		1 ft (305 mm)	108-000039-01	910503700315
		5 ft (1.5 m)	108-000039-02	910503700316
	CE	End-to-end	108-000040-00	910503700317
		1 ft (305 mm)	108-000040-01	910503700318
		5 ft (1.5 m)	108-000040-02	910503700319
Glare Shield		1 ft (305 mm)	120-000081-00	910503700745
		2 ft (610 mm)	120-000081-01	910503700746
		3 ft (914 mm)	120-000081-02	910503700747
		4 ft (1.2 m)	120-000081-03	910503700748
Additional Terminators		Quantity 10	120-000074-00	910503700580
Additional Hinge		Quantity 1	120-000098-00	910503700772
Data Enabler Pro	3/4 in / 1/2 in NPT (U.S. trade size conduit)		106-000004-00	910503701210
	PG21 / PG13 (metric size conduit)		106-000004-01	910503701211

Use Item Number when ordering in North America.

.4 in
10 mm

3.1 in
79 mm

Installation

iW Graze Powercore offers dimmable, high-intensity white LED illumination with variable color temperature for wall-washing and grazing, enhancing architectural detail, both indoors and outdoors. Patented Powercore technology integrates LED power and data management within the fixture, eases installation by eliminating the need for external power supplies.

Owner/User Responsibilities

It is the responsibility of the contractor, installer, purchaser, owner, and user to install, maintain, and operate iW Graze Powercore fixtures 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 Data Enabler Pro devices and junction boxes with electronics-grade RTV silicone sealant so that water or moisture cannot enter or accumulate in wiring compartments, cables, or other electrical parts. Use suitable outdoor-rated junction boxes when installing in damp or wet locations. Additionally, use gaskets, clamps, and other parts required for installation to comply with all applicable local and national codes.

✱ Refer to the iW Graze Powercore Installation Instructions for specific warning and caution statements.

Planning Your Installation

Regardless of the size and complexity of your installation, the time you spend up front can help minimize installation and configuration issues later. Well-designed lighting brightens an area, highlights architectural features or products, and enhances the ways you perform tasks.

Keep the following in mind as you plan your installation:

- Refer to the lighting design plan, architectural diagram, or other diagram that shows the physical layout of the installation to identify the locations of each all switches, controllers. Data Enabler Pro devices, fixtures, and cables.

- End-to-end Jumper Cables enable you to create straight linear runs, while 1 ft (305 mm) and 5 ft (1.5 m) Jumper Cables enable you to work around obstacles and features or create spacing between fixtures.

- Each series of iW Graze Powercore fixtures can be installed in a single linear run, or split into parallel series using a common junction box. If splitting a run, ensure that all junction boxes are suitable for the environment and sealed if necessary, and that all wiring between junction boxes complies with local codes.

- The maximum number of fixtures you can connect in a single run depends on specific configuration details such as fixture length, fixture spacing (Jumper Cables), circuit size, line voltage, and Leader Cable length. As an example, the table to the right lists the maximum number of fixtures in a single run at various voltages, assuming 2 ft (610 mm) fixtures installed end-to-end on a 20 A circuit, using a standard 50 ft (15.2 m) Leader Cable. Keep in mind that these figures, provided as a guideline, are accurate for the specified configuration only. Changing the configuration can affect the fixture run lengths.

Fixture run lengths

37 @ 100 VAC
43 @ 120 VAC
56 @ 220 – 240 VAC

assuming 2 ft (610 mm) fixtures installed end-to-end, 20 A circuit, standard 50 ft (15.2 m) Leader Cable

✱ For help calculating the number of fixtures your specific installation can support, download the Configuration Calculator from www.colorkinetics.com/support/install_tool/, or consult Application Engineering Services at support@colorkinetics.com.

- In addition to maximum fixture run lengths determined by the electrical configuration, each Data Enabler Pro imposes maximum run lengths based on data integrity. To ensure data integrity, maximum individual run lengths should not exceed 175 ft (53.3 m), and the total cable length per Data Enabler Pro should not exceed 400 ft (122 m).

Data Integrity — maximum individual length 175 ft (53.3 m)

Data Integrity — total length 400 ft (122 m)
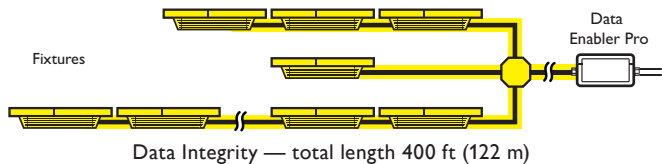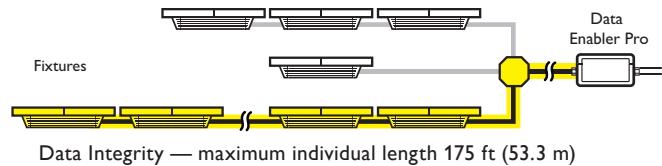
- For high-contrast surface grazing — for example, to highlight unique textures or features — place 10° x 60° fixtures within 4 in (102 mm) of a wall or other surface, with each fixture's light beam parallel with the wall or surface.

  For smooth, wall-washing light that reflects a glare-free ambient glow into the surrounding area, use 30° x 60° fixtures, and place them at a greater distance from the wall or surface, with each fixture projecting its light beam parallel or at an angle with the wall or surface.

  All iW Graze Powercore fixtures offer a 60° horizontal beam angle. The 60° beam angle lets you add space between fixtures without visible light scalloping.

- For installations in which you want to manually adjust the brightness and color temperature of all connected iW Graze Powercore fixtures in unison, use ColorDial Pro. For installations in which you want to dynamically control the brightness and color temperature of individual fixtures or fixture segments, use a controller such as iPlayer 3 or Light System Manager. Refer to "Controlling iW Graze Powercore Fixtures" below for details.

Start the Installation

1. Install all Data Enabler Pro devices, including any interfaces with controllers. Data Enabler Pro devices and external controllers send power and control signals to the fixtures over a single fixture cable. Additional cabling is required to connect fixtures together in parallel or in series.

2. Verify that all additional supporting equipment (switches, controllers) is in place.

3. Ensure that all additional parts and tools are available, including:

   - The included mounting hinges and hardware

   - 2 mm, 2.5 mm, and 4 mm hex key wrenches

   - 1/4 in (5 mm) socket cap fasteners, anchors, or screws for surface mounting

   - Conduit, as needed.

   - A sufficient length of 4-conductor copper wire. Standard 12 AWG (2.05 mm) stranded wire is recommended.

   - Junction boxes, as needed, rated for your application. (Refer to the manufacturer's literature for additional items required for mounting or sealing.)

   - Electronics-grade room temperature vulcanizing (RTV) silicone sealant, as needed.

✿ Refer to the Data Enabler Pro Installation Instructions or Product Guide for guidelines on configuring and positioning the Data Enabler Pro in relation to the controller.

Unpack and Position Fixtures

1. Carefully inspect the box containing iW Graze Powercore and the contents for any damage that may have occurred in transit.

2. iW Graze Powercore fixtures are addressable in 1 ft (305 mm) segments. This feature allows playback controllers to send unique light output data to each segment of each fixture within your installation.

   Each fixture segment, or LED node, come pre-programmed with a unique serial number. Each fixture has two, three, or four serial numbers, depending on its length. If you plan to control fixtures or fixture segments independently, record the serial numbers in a layout grid (typically a spreadsheet or list) for easy reference and light addressing.
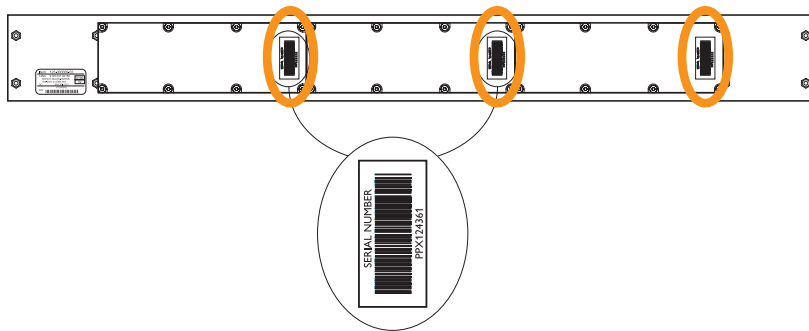
3. Assign each fixture to a position in the lighting design plan.

4. To streamline installation and aid in light address programming, you can affix a weatherproof label identifying the order or placement in the installation to an inconspicuous location on each fixture's housing.

Included in the box

iW Graze Powercore fixture
(2) Mounting hinges
(4) M5, 15 mm stainless steel hex bolts for hinge installation
Installation Instructions
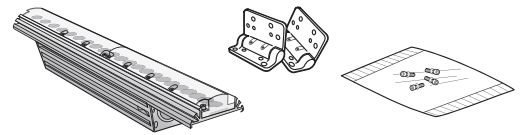
❄ *Clean the lens with water and mild detergent using a soft cleaning cloth, and wipe dry. Because they will scratch, soften, pit, haze, yellow, mar, or crack the lens, do not use paper towels, abrasive cleaning products, window cleaners, or cleaning solutions containing chemicals such as ammonia, sodium hydroxide, and isopropyl alcohol.*
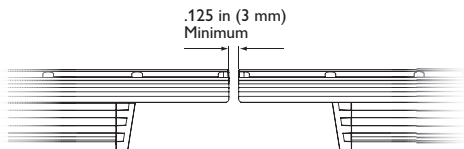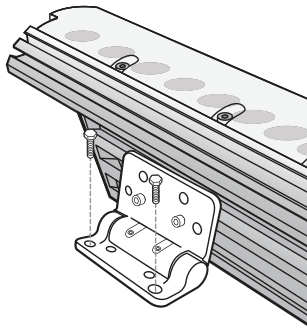
Mount and Connect Fixtures

Make sure the power is OFF before mounting and connecting iW Graze Powercore fixtures.
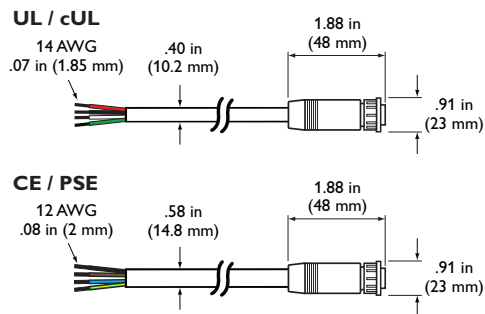
1. Using the included 4 mm hex hardware, attach two hinges to each fixture. There are three possible methods for attaching hinges to the fixtures, each method offering differing degrees of swing radius and space-efficiency. Select the method most suitable for your application.

   Note that iW Graze Powercore fixtures are directional: There is a male connector plug on one end of the fixture and a female connector plug on the other end. When installing a linear series of fixtures, ensure that all fixtures are oriented in the same direction. Note that the Leader Cable connects to the male connector plug on the first fixture in each series.

.125 in (3 mm)
Minimum
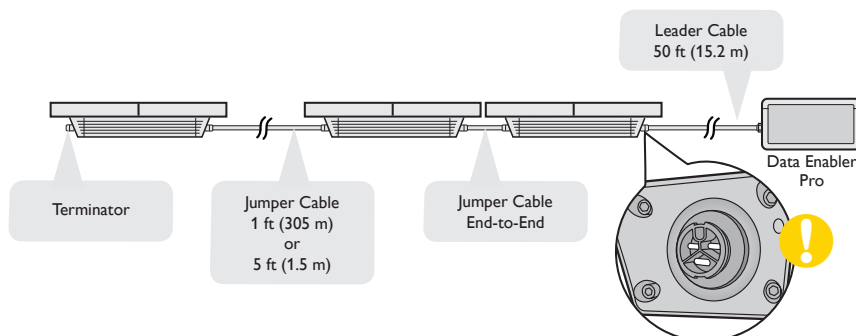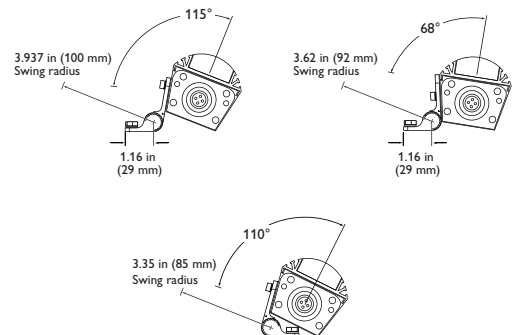
Leader Cable Connector Dimensions

UL / cUL

14 AWG
.07 in (1.85 mm)

.40 in
(10.2 mm)

1.88 in
(48 mm)

.91 in
(23 mm)

CE / PSE

12 AWG
.08 in (2 mm)

.58 in
(14.8 mm)

1.88 in
(48 mm)

.91 in
(23 mm)

2. Using 1/4 in (5 mm) socket cap screws, bolts, or anchors, mount the fixture hinge assemblies directly to a wall or other suitable mounting surface.

3. Rotate the fixture hinge assemblies into the desired positions. For consistent position control, use the indicators on the side of each hinge knuckle for reference. Use a 2 mm hex key wrench to loosen the set screws, as needed.

4. To accommodate installation from various angles, each hinge has four set screws designed to lock the hinge position. All four, or only two, of the set screws may be used, depending on the mounting method and swing radius you select for the hinge. For example, if the hinge leaves are to be fully closed, the interior set screws may not be accessible.

   Do not lock the hinges positions at this time; the hinges have a built-in constant torque feature that allows temporary positioning. For optimal light output performance, aim and lock the hinges following installation.

5. Connect the leader cables from the Data Enabler Pro devices to the fixtures.

   If installing fixtures in a single linear series, connect the provided Leader Cable from the Data Enabler Pro to the first fixture in the series. Twist the connector ends to lock the Leader Cable into place.

   If installing fixtures in parallel, pull copper wire from the Data Enabler Pro to the common junction box. We recommend the use of 12 AWG (2.05 mm), stranded 4-conductor copper wire.

   Connect the provided Leader Cables from the common junction box to the first fixture in each series.

   Within the junction box, use wire nuts to connect line, neutral, ground, and data wires. Tuck wire connections into the junction box, then enclose. If installing in a wet or damp location, seal all junction boxes with electronics-grade RTV silicone sealant. Use gaskets, clamps, and other parts and fittings required to comply with local outdoor wiring codes.

6. Connect all Jumper Cables between fixtures. Twist the connector ends to lock.

7. Attach the terminator to the last fixture in each series. Terminators are provided with the Leader Cables.
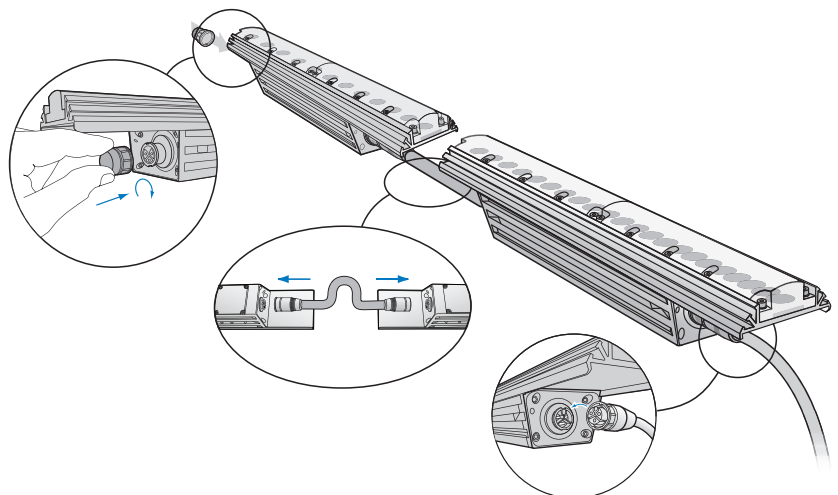
Connect Leader Cable to Power

Once you've made all fixture and junction box connections, connect the Leader Cable to the fixture cable 4-wire PC terminal connector block inside the Data Enabler Pro Housing.

Power / data output to fixtures

UL / cUL

L   N

CE / PSE

L   N

Mains voltage output
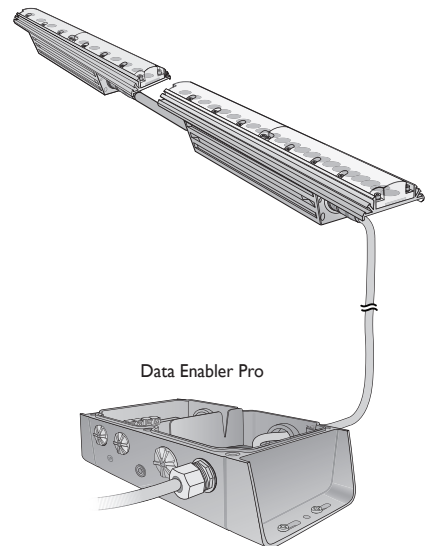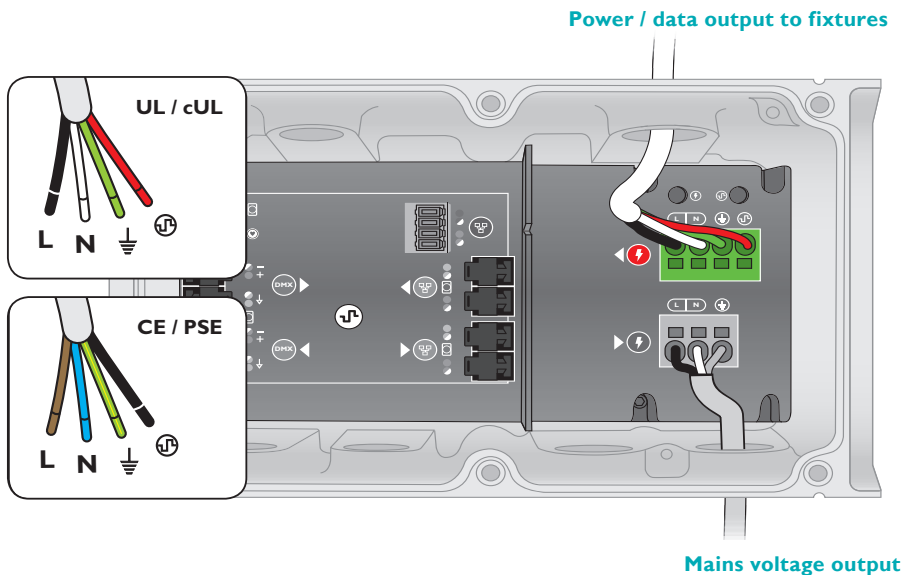
Data Enabler Pro

✳ Refer to the Data Enabler Pro Product Guide for comprehensive installation and configuration instructions. You can view or download the guide from www.colorkinetics.com/ls/pds/ dataenablerpro

Controlling iW Graze Powercore Fixtures

Philips Color Kinetics offers a number of control options for all iW Graze Powercore fixtures, from simple to complex.

Displaying Fixed Light Output

For installations in which you want to manually adjust the brightness and color temperature of all fixtures in unison, use the Fixed White effect in iColor Player, ColorDial Pro or iColor Keypad. With these controllers, no fixture addressing or configuration is necessary.

ColorDial Pro and iColor Keypad are a Power-Over-Ethernet (PoE) devices that require a PoE switch, or a conventional Ethernet switch with a PoE injector. Refer to the ColorDial Pro or iColor Keypad documentation for details on how to install and use these controllers with iW Graze Powercore fixtures.

Displaying Dynamic Light Output

For dynamic installations in which you want to display different light output on iW Graze Powercore fixtures simultaneously, you must use an RGB-based DMX or Ethernet controller such as iColor Player, iPlayer 3, or Light System Manager. To support dynamic effects that automatically modify brightness and color temperature on individual fixtures, you must address and configure iW Graze Powercore fixtures as you would any color-changing (RGB) fixture.

iW Graze Powercore fixtures use DMX addresses to communicate with controllers. The number of DMX addresses each iW Graze Powercore fixture requires depends on the fixture's configuration.

Addressing iW Graze Powercore Fixtures

Make sure the power is ON before addressing and configuring fixtures.

You address and configure iW Graze Powercore fixtures using QuickPlay Pro addressing and configuration software. Fixtures are identified within QuickPlay Pro by serial number, so you will need the layout grid that you created when you recorded the serial numbers of your fixtures during installation planning.

- In Ethernet installations, you can address and configure your fixtures using QuickPlay Pro with a computer connected to your lighting installation's network. QuickPlay Pro can automatically discover all of your fixtures, controllers, and Data Enabler Pro devices for quick configuration.

- In DMX installations, you can address and configure your fixtures using QuickPlay Pro with iPlayer 3 or SmartJack Pro. You can manually enter fixture serial numbers, or you can import a spreadsheet listing each fixture's serial number and starting DMX address.

iW Graze Powercore fixtures operate in 8-bit mode by default. You can configure fixtures to operate in 16-bit mode, which increases resolution for smoother dimming and more precise control. In 8-bit mode, fixtures use one DMX address per LED channel. In 16-bit mode, fixtures use two DMX addresses per LED channel. The first DMX address corresponds to the "coarse" data for that channel, and the second corresponds to the "fine" data. By using double the number of DMX addresses, 16-bit mode increases fixture resolution from 256 dimming steps to 65,536 (256 x 256) dimming steps.

You can address and configure iW Graze Powercore fixtures in much the same way as you would address any RGB fixture. The red channel corresponds to the warm LEDs, the green channel corresponds to the cool LEDs, and the blue channel is not used.

LED Channels

RGB	iW Graze Powercore
Red	Warm
Green	Cool
Blue	Unused

Note that although the blue DMX channel is not used, it is *assigned*, so that each iW Graze Powercore fixture uses three DMX sequential addresses (or a multiple of three addresses).

iW Graze Powercore fixtures come factory-addressed with a starting DMX address of 1. For lighting designs where fixtures work in unison, all fixtures can be assigned the same starting DMX address. Changes to the default starting DMX addresses are not necessary, but if lights were previously readdressed for use in other installations, you must reset them. For light show designs that show different light output on different fixtures simultaneously, you must assign unique DMX addresses to your fixtures and sort them in a useful order.

The following table shows the DMX channel assignments for 8-bit and 16-bit iW Graze Powercore configurations, assuming a starting DMX address of 1.

DMX Channel Assignments

8-bit Mode	1		2		3	
	Warm		Cool		Unused	
16-Bit Mode	1	2	3	4	5	6
	Warm	Warm	Cool	Cool	Unused	Unused

Aim and Lock the Fixtures

Make sure the power is ON before aiming and locking iW Graze Powercore fixtures.

Rotate the fixtures to achieve the optimal angle for light output. For consistent position control, use the indicators on the side of each hinge knuckle as reference.

For fine horizontal adjustment, you can change the position of the hinge mounting block located on the side of each fixture. Loosen the set screw with a 2.5 mm hex key, slide the mounting block to the desired position, then tighten the set screw.

Once satisfied with fixture angles and positioning, use a 2 mm hex key wrench to tighten the hinge position set screws and lock each hinge.

Attach Glare Shields (Optional)

Glare Shields, in 1 ft (305 mm), 2 ft (610 mm), 3 ft (914 mm), and 4 ft (1.2 m) lengths, can be inserted in the grooves in the iW Graze Powercore housing. Glare Shields block unwanted spill light, and can shield the light sources from being directly visible in certain mounting situations.

1. Insert the Glare Shield's triangular tab in the outer groove on the side of the iW Graze Powercore housing.
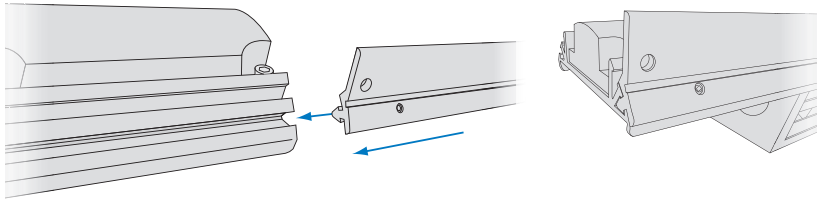
2. Using a hex wrench, tighten the locking screws to hold the Glare Shield in place.

3. (Optional) Attach a tether to the knockout in the Glare Shield, and affix the tether to a secure anchor point.

❋ Do not look directly into a fixture when aiming and locking.

❋ The hinge position set screws have factory applied thread lock. Confirm the fixture angle and positioning before locking each hinge.

1.5 mm

DAS-000026-00 R02 05-12