



eW Flex Micro

Flexible strands of high-intensity LED nodes with solid white light

PHILIPS



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Flexible strands of small, high-intensity LED nodes with solid white light

eW Flex Micro is a versatile strand of 50 small, individually controllable LED nodes. The flexible form factor allows dynamic points of white light to be installed across nearly any interior or exterior surface, including walls, ceilings, floors, three-dimensional sculptures, and set pieces. eW Flex Micro can also light tight alcove spaces and signage, and in certain cases, can even display video.

- Daylight visible — At full brightness, each node produces light output of up to 10.5 candela and 7529 nits per node.
- Adaptable mounting — Strands can be mounted directly to a surface, like traditional string lights. Detachable leader cables in multiple lengths allow you to install strings at the appropriate distance from power/data supplies. Optional mounting tracks ensure straight linear runs, while snap-on spacers hide cabling and mounting hardware. Single node mounts can be positioned individually as anchor points for installations with uneven node spacing or complex geometries.
- Outdoor rated — Fully sealed for maximum fixture life and IP66-rated for outdoor applications.
- Supports cost-effective video displays — Flexible form factor, offering maximum lighting control at 25 W per strand, accommodates unique lighting installations, including two- and three-dimensional video displays.
- Multiple lens options — Clear dome and translucent dome lenses are standard. Clear flat and translucent flat lenses are also available.
- Standard and custom lengths and node spacing — eW Flex Micro strands are available with standard on-center node spacing of 102 mm (4 in) or 305 mm (12 in) along a three-wire, 18 AWG cable. For information about custom orders, see the eW Flex Micro Ordering Sheet at www.colorkinetics.com/lis/ew/flexmicro/
- Custom Leader Cables — Custom Leader Cable lengths are available in addition to standard cables of 7.6 m (25 ft), 15.2 m (50 ft), and 30.5 m (100 ft).
- Industry-leading controls — eW Flex Micro works seamlessly with the complete Philips line of controllers, including Video System Manager Pro, Light System Manager, and iPlayer 3, as well as third-party DMX controllers.
- Durable and weather-resistant — Fully sealed for maximum fixture life and IP66-rated for outdoor applications.



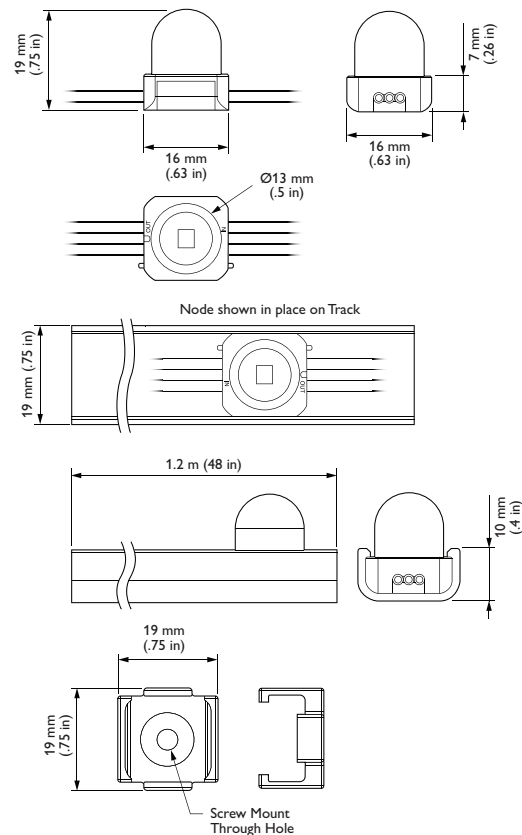
Superior Light Output

eW Flex Micro strands consist of 50 individually controllable, high-intensity LED nodes. Each node produces solid white light output of up to 10.5 candela.

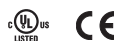
Specifications

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

Item	Specification	Clear Dome Lens	Translucent Dome Lens	
Output	Lumens Per Node	2700 K	25.7	17.5
		4000 K	27.8	18.2
	Candela Per Node	2700 K	10.1	3.5
		4000 K	10.5	3.7
	Luminance Per Node	2700 K	6962 cd/m ²	2571 cd/m ²
		4000 K	7529 cd/m ²	2684 cd/m ²
CRI	2700 K	84	86	
	4000 K	86	89	
Viewing Angle		105°	165°	
Electrical	Input Voltage	24 VDC via PDS-60ca, sPDS-60ca, sPDS-480ca		
	Power Consumption	0.5 W (Maximum per node at full output, steady state)		
Control	Interface	PDS-60ca 24V (Pre-programmed or DMX/Ethernet) sPDS-60ca 24V (Pre-programmed or DMX/Ethernet) sPDS-480ca 24V (Ethernet)		
	Control System	Philips Color Kinetics full range of controllers, including Light System Manager, Video System Manager Pro, iPlayer 3, Antumbra iColor Keypad, and ColorDial Pro, or third-party controllers		
Physical	Node Dimensions <i>Height x Width x Depth</i>	19 x 16 x 16 mm (0.8 x 0.6 x 0.6 in)	19 x 16 x 16 mm (0.8 x 0.6 x 0.6 in)	
	Weight	381 g (13.4 oz) 50-node strand, 4 in on-center node spacing 970 g (2.1 lb) 50-node strand, 12 in on-center node spacing		
	Housing	White or black polycarbonate		
	Lens	Clear UV-protected polycarbonate Translucent UV-protected polycarbonate		
	Fixture Connections	Integrated watertight 3-pin connector		
	Temperature Ranges	-30° – 50° C (-22° – 122° F) Operating ≥ 0° C (≥ 32° F) Handling -20° – 50° C (-4° – 122° F) Startup -30° – 85° C (-22° – 185° F) Storage		
	Humidity	0 – 95%, non-condensing		
Maximum Fixtures Per Power/Data Supply	PDS-60ca 24V: 2 strands sPDS-60ca 24V: 2 strands sPDS-480ca 24V: 8 strands			
Certification and Safety	Certification	UL/cUL, FCC Class A, CE		
	Environment	Dry/Damp/Wet Location, IP66		



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Lumen Maintenance

Threshold [§]	Ambient Temperature	Reported [¶]	Calculated [¶]
L90	@ 25°C	38,000 hrs	38,000 hrs
	@ 50°C	27,000 hrs	27,000 hrs
L80	@ 25°C	>60,000 hrs	90,000 hrs
	@ 50°C	>60,000 hrs	61,000 hrs
L70	@ 25°C	>60,000 hrs	>100,000 hrs
	@ 50°C	>60,000 hrs	100,000 hrs

For help estimating the light output and distribution of lighting fixtures, please refer to individual specification sheets at www.colorkinetics.com/lis/essentialwhite/ewflexcompact/.

[§] Lxx = xx% lumen maintenance (when light output drops below xx% of initial output). All values are given at B10, or the median value where 90% of the LED population is better than the reported or calculated lumen maintenance measurement.

[¶] Lumen maintenance figures are based on lifetime prediction graphs supplied by LED source manufacturers. Whenever possible, figures use measurements that comply with IES LM-80-08 testing procedures. In accordance with TM-21-11, Reported values represent the interpolated value based on six times the LM-80-08 total test duration (in hours). Calculated values represent time durations that exceed six times the total test duration.

Fixtures and Power/Data Supplies

eW Flex Micro is part of a complete system which includes fixtures and:

- One or more power/data supplies.
- One Leader Cable to attach each strand of eW Flex Micro fixtures to a power/data supply port
- Optional mounting tracks, spacers, or single node mounts.
- Any Philips controller, including Video System Manager, Light System Manager, and iPlayer 3, or any third-party controller.

Fixtures

Item	Type		Item Number	Philips 12NC	
eW Flex Micro 50 nodes 4 in on-center node spacing	2700 K	Clear Dome Lens	White	500-000011-00	912400130444
			Black	500-000011-01	912400130445
		Translucent Dome Lens	White	500-000011-02	912400130446
			Black	500-000011-03	912400130447
	3000 K	Clear Dome Lens	White	500-000011-08	912400130452
			Black	500-000011-09	912400130453
		Translucent Dome Lens	White	500-000011-10	912400130454
			Black	500-000011-11	912400130455
	3500 K	Clear Dome Lens	White	500-000011-16	912400130460
			Black	500-000011-17	912400130461
		Translucent Dome Lens	White	500-000011-18	912400130462
			Black	500-000011-19	912400130463
	4000 K	Clear Dome Lens	White	500-000011-24	912400130468
			Black	500-000011-25	912400130469
		Translucent Dome Lens	White	500-000011-26	912400130470
			Black	500-000011-27	912400130471
	5000 K	Clear Dome Lens	White	500-000011-48	912400133517
			Black	500-000011-49	912400133518
		Translucent Dome Lens	White	500-000011-50	912400133519
			Black	500-000011-51	912400133520
	5700 K	Clear Dome Lens	White	500-000011-32	912400130476
			Black	500-000011-33	912400130477
		Translucent Dome Lens	White	500-000011-34	912400130478
			Black	500-000011-35	912400130479
6500 K	Clear Dome Lens	White	500-000011-40	912400130484	
		Black	500-000011-41	912400130485	
	Translucent Dome Lens	White	500-000011-42	912400130486	
		Black	500-000011-43	912400130487	

Included in the box

eW Flex Micro strand (50 nodes)
Extra termination cap
Installation Instructions

Custom Configurations

In addition to the standard configurations discussed in this product guide, custom configurations are also available. See the eW Flex Micro Ordering Information sheet at www.colorkinetics.com/ls/ew/flexmicro/ for more information.

Component	Available Non-Standard Options
Node Spacing	51 mm (2 in) – 610 mm (24 in) on-center
Strand Length	5 – 60 nodes
Node/Cable Color	Clear
Lens	Clear flat, translucent flat

Item	Type		Item Number	Philips 12NC	
eW Flex Micro 50 nodes 12 in on-center node spacing	2700 K	Clear Dome Lens	White	500-000011-04	912400130448
			Black	500-000011-05	912400130449
		Translucent Dome Lens	White	500-000011-06	912400130450
			Black	500-000011-07	912400130451
	3000 K	Clear Dome Lens	White	500-000011-12	912400130456
			Black	500-000011-13	912400130457
		Translucent Dome Lens	White	500-000011-14	912400130458
			Black	500-000011-15	912400130459
	3500 K	Clear Dome Lens	White	500-000011-20	912400130464
			Black	500-000011-21	912400130465
		Translucent Dome Lens	White	500-000011-22	912400130466
			Black	500-000011-23	912400130467
	4000 K	Clear Dome Lens	White	500-000011-28	912400130472
			Black	500-000011-29	912400130473
		Translucent Dome Lens	White	500-000011-30	912400130474
			Black	500-000011-31	912400130475
	5000 K	Clear Dome Lens	White	500-000011-52	912400133521
			Black	500-000011-53	912400133522
		Translucent Dome Lens	White	500-000011-54	912400133523
			Black	500-000011-55	912400133524
	5700 K	Clear Dome Lens	White	500-000011-36	912400130480
			Black	500-000011-37	912400130481
		Translucent Dome Lens	White	500-000011-38	912400130482
			Black	500-000011-39	912400130483
6500 K	Clear Dome Lens	White	500-000011-44	912400130488	
		Black	500-000011-45	912400130489	
	Translucent Dome Lens	White	500-000011-46	912400130490	
		Black	500-000011-47	912400130491	

Accessories

Item	Type	Color	Item Number	Philips 12NC
Leader Cable	7.6 m (25 ft)	Black	108-000045-00	910503700696
	15.2 m (50 ft)	Black	108-000045-01	910503700697
	30.5 m (100 ft)	Black	108-000045-02	910503700698
Mounting Track	1.2 m (1 4 ft.) track	White	101-000024-00	910503700015
		Black	101-000024-01	910503700016
Spacers	50 102 mm (4 in) spacers	White	101-000047-00	910503700030
		Black	101-000047-01	910503700031
	50 305 mm (12 in) spacers	White	101-000048-00	910503700032
		Black	101-000048-01	910503700033
Single-Node Mounts	50 mounts	White	101-000039-00	910503700025
		Black	101-000039-01	910503700026

Ordering Information

Item	Type	Item Number	Philips 12NC
PDS-60ca 24V Power/ Data Supply	DMX/Ethernet	109-000016-04	912400133526
sPDS-60ca 24V Power/ Data Supply	DMX/Ethernet	109-000021-04 (NA Cord)	912400133527
		109-000021-05 (EU/UK Cord)	912400133636
sPDS-480ca 24V Power/Data Supply	Ethernet	109-000026-01	912400133528

Use Item Number when ordering in North America.

Installation

eW Flex Micro can be used in a wide range of two-dimensional and three-dimensional configurations, including portable video screens and permanent building-covering displays. eW Flex Micro installations are not constrained by fixture size, shape, or architectural space.

Because of their potential complexity, eW Flex Micro installations require up-front planning for configuring, positioning, and mounting the fixture strands. Planning includes understanding how to position strands in relation to power/data supplies and the number of strands each power/data supply can support. Planning for video displays involves additional considerations, such as how to space eW Flex Micro nodes to achieve the desired pixel pitch, minimum and maximum viewing distances, sampling, and display resolution.

All installations involve three main steps:

1. Create a lighting design plan and layout grid
2. Mount fixture strands
3. Test fixture strands

Owner/User Responsibilities

It is the responsibility of the contractor, installer, purchaser, owner, and user to install, maintain, and operate strands of eW Flex Micro 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 fixture connections, power/data supplies, 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 wet or damp locations. Additionally, use gaskets, clamps, and other parts required for installation to comply with all applicable local and national codes.

DMX or Ethernet Control?

eW Flex Micro installations can be controlled via either DMX or Ethernet. DMX is appropriate for relatively simple installations, or for installations where all lights operate in unison — for example, for accenting, perimeter lighting, or cove lighting applications.

Each node in a strand of eW Flex Micro is identified by a *light number*. A light number corresponds to three sequential DMX addresses, one for red, one for green, and one for blue. A DMX universe consists of 512 addresses, so the maximum number of light numbers available in a DMX universe is 170 ($170 \times 3 = 510$).

Because Ethernet is not subject to the DMX addressing limitations, it is the preferred environment for dynamic light shows and video displays, both of which require numerous unique light numbers. In an Ethernet environment, each power/data supply effectively acts as its own universe.

DMX installations require the use of a PDS-60ca 24V or sPDS-60ca 24V power/data supply, while the sPDS-480ca 24V power/data supply is Ethernet only.

* Clean lenses with water and mild detergent using a soft cleaning cloth. Wipe lenses dry. Do not use paper towels, abrasive cleaning products, or window cleaners. Abrasive cleaning products will scratch lenses, and window cleaners will soften and mar the polycarbonate. Do not use cleaning solutions that contain ammonia, sodium hydroxide, or isopropyl alcohol, which can scratch, pit, haze, yellow, or crack lenses.

* Refer to the eW Flex Micro Installation Instructions for specific warning and caution statements.

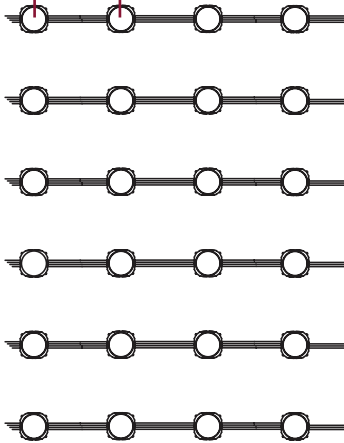
Considerations for Video Displays

In addition to the planning required for all eW Flex Micro installations, planning for video displays involves special considerations such as pixel pitch, minimum and maximum viewing distances, sampling, and display resolution.

Determining Pixel Pitch and Viewing Distances for Video Displays

When using eW Flex Micro strands to display video, each node acts as a pixel in the display. Images on an LED video display appear to be sharper to the human eye as the distance to the display increases. Likewise, images appear less visible as the distance decreases. The spacing between pixels, known as the *pixel pitch*, determines the minimum and maximum viewing distances for discernible video output. Pixel pitch is measured center-to-center. For an eW Flex Micro strand, you determine pixel pitch by measuring from the center of one node to the center of the next.

Measure from the center of one node to the center of an adjacent node to determine pixel pitch



Designing a layout with overlapping strands is a common technique for increasing pixel pitch. For example, to create a dense line of nodes, place multiple runs close to each other vertically, with a slight horizontal offset between the nodes. Philips offers eW Flex Micro with both 102 mm (4 in) and 305 mm (12 in) spacing between nodes. Using strands with made-to-order node spacing is another method for adjusting pixel pitch.

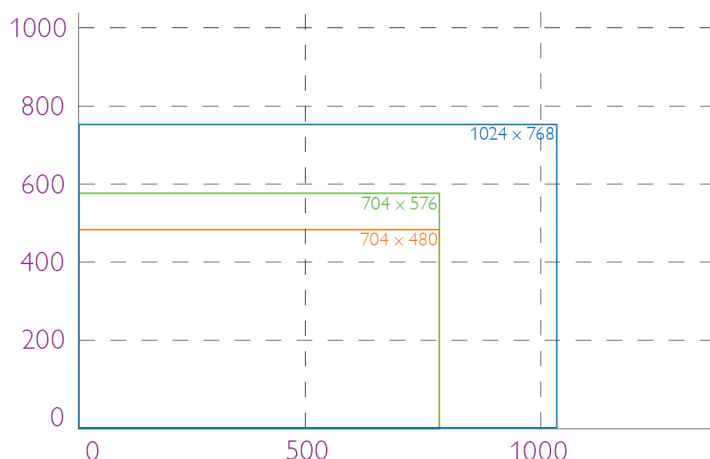
The following calculations and examples are general guidelines for determining minimum and maximum viewing distances, based on video displays using grids of evenly spaced pixels:

- To determine minimum viewing distance, multiply pixel pitch by 100 distance units. For example, if the pixel pitch is 50 mm (2 in), the minimum viewing distance is 5 m (16.4 ft).
- To determine the maximum viewing distance for discernible video, multiply the screen height by 20 distance units. For example, if the screen height is 20 m (65.6 ft), then the maximum viewing distance for recognizable video is 400 m (1312.3 ft).
- LED screens are visible beyond the maximum viewing distance for discernible video. To determine the maximum viewing distance that still creates visual impact, multiply the screen height by 50 units. For example, a screen 20 m (65.6 ft) high will continue to create visual impact at 1000 m (3280.8 ft).

Working with Video Display Resolutions

The resolution of an LED video display equals the total number of vertical and horizontal pixels — the greater the pixel count, the greater the resolution.

- The resolution of VSE digital video is 1024 x 768
- The resolution of PAL video is 704 x 576
- The resolution of NTSC video is 704 x 480



Reproducing a video signal with 1:1 pixel mapping on an LED display requires a substantial pixel count. For example, true NTSC video output requires 337,920 pixels, PAL output requires 405,504 pixels, and digital video output requires 786,432 pixels.

However, you can use a controller such as Philips Video System Manager Pro to reduce the required pixel count for any video format by sampling and distributing pixels from the source video to match your installation.

For example, if you retain the horizontal resolution of a digital video source (1024 lines wide), but sample every tenth line of pixels vertically (76 lines high instead of 768 lines), you can retain the correct aspect ratio while exponentially reducing the pixel count. From a distance, even with only 76 lines of vertical output, the human eye can still discern video images because the horizontal resolution is dense.

An installation using 1024 x 76 nodes would have a pixel count of 77,824 yet still display high-quality digital video output. This method is especially effective when creating an installation that covers a building which, by necessity, already has spacing between lines of video due to windows and other architectural features.

Create a Lighting Design Plan and Layout Grid

Even for relatively simple installations, it's good practice to create a lighting design plan. For complex installations displaying light shows with dynamic effects, and especially for Ethernet-based video displays, such a plan is essential. A lighting design plan is typically an architectural diagram or other diagram that shows the physical layout of the installation, including the appropriate positioning and spacing of all fixtures, power/data supplies, power sources, controllers, cables, and other required hardware. For DMX installations, the plan should record the DMX base number and node count for each eW Flex Micro strand. For Ethernet installations, the plan should record the IP address of each power/data supply and the number of nodes per power/data supply port.

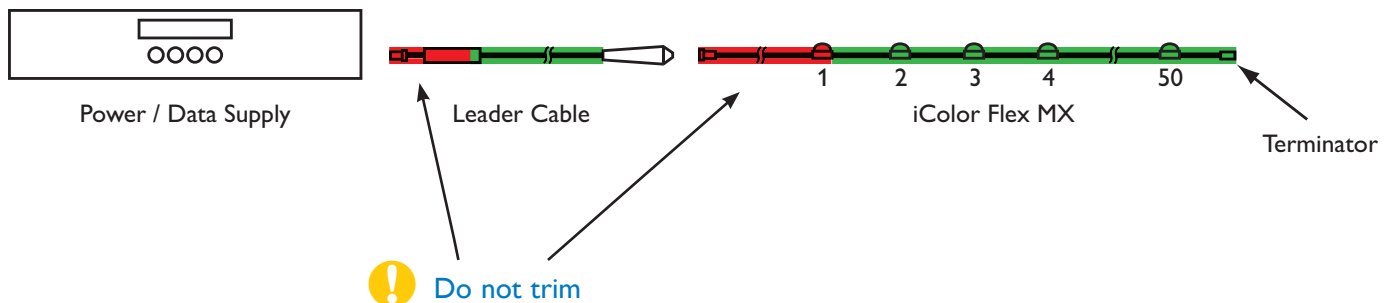
Keep the following considerations in mind when creating a lighting design plan and layout grid:

- Determine the appropriate location of each power/data supply in relation to the fixtures, and of the fixtures in relation to each other. You connect a strand of eW Flex Micro fixtures to an available power/data supply port using a Leader Cable of 7.6 m (25 ft), 15.2 m (50 ft), or 30.5 m (100 ft).
- eW Flex Micro Leader Cables can be shortened, and strands can be cut to any node length. An extra termination cap is included for sealing the cut end of the strand.

Do not trim the Leader Cable between the power/data supply connector and the PCA transmitter junction box. Do not trim strands between the connector and the first node.

** For designs where the acceptable level of discernible video may be more or less demanding, or for help with your specific installation, contact Philips Color Kinetics Application Engineering Services for assistance.*

** Refer to the Installation Instructions or Specification Sheet of your power/data supply for guidelines on configuring and positioning the power/data supply in relation to a controller or Ethernet switch.*




- On an architectural diagram or other diagram that shows the physical layout of the installation, identify the locations of all switches, controllers, power supplies, and fixtures.
- Nodes in each strand are sequentially addressed beginning with the node closest to the Leader Cable. Orientation of the power/data supply is therefore especially critical when using dynamic effects.
- In Ethernet environments, each power/data supply is identified with a unique IP address. We recommend recording the IP address of each power/data supply on a layout grid. For complex installations with many power/data supplies, we recommend assigning meaningful IP addresses to each power/data supply so that their locations are easy to identify.

Start the Installation

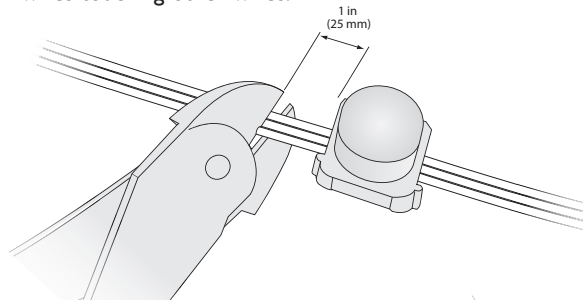
1. Install all power/data supplies, including any interfaces with controllers. Power/data supplies send power and control signals to fixtures over the Leader Cable.
2. Verify that all additional supporting equipment (switches, controllers) is in place.
3. Ensure that all additional parts (for example, optional single node mounts, spacers, mounting track, and mounting hardware) and tools are available.

Cut and Seal eW Flex Micro Strands (Optional)


You can cut eW Flex Micro strands to any desired node length. We recommend cutting and sealing the strands before mounting them.

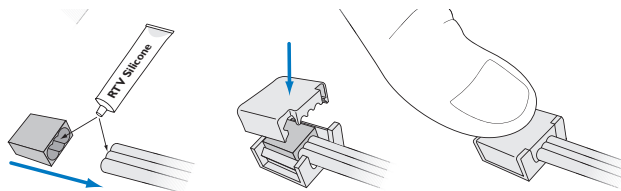
 Never cut a strand between the three-pin connector and the first node.

1. Using a wire cutter, cut the cable to the desired length, leaving at least 25 mm (1 in) of cable after the last node. Ensure that the cut is clean and that there are no frayed wires touching other wires.



2. Apply a liberal amount of electronics-grade RTV silicone to the cable ends and to the opening of the rubber seal boot included with the extra termination cap. Insert the boot onto the cable.
3. Sit the sealed cable boot into the base of the provided termination cap.
4. Firmly press the termination cap onto the base until the top snaps into place. If using pliers, be careful not to crack the housing.

 Never reuse a termination cap.



Mount the Fixtures

You can mount eW Flex Micro strands directly to a mounting surface, or you can mount them using eW Flex Micro mounting accessories (available separately):

- Optional mounting tracks ensure straight runs in linear applications. Spacers snap to the mounting tracks for a clean, finished look that hides cables and mounting hardware between nodes.
- Single node mounts can be positioned individually to provide anchor points for nodes in installations with uneven node spacing or complex geometries.

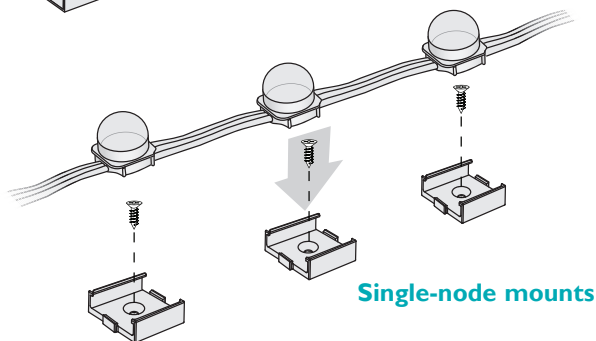
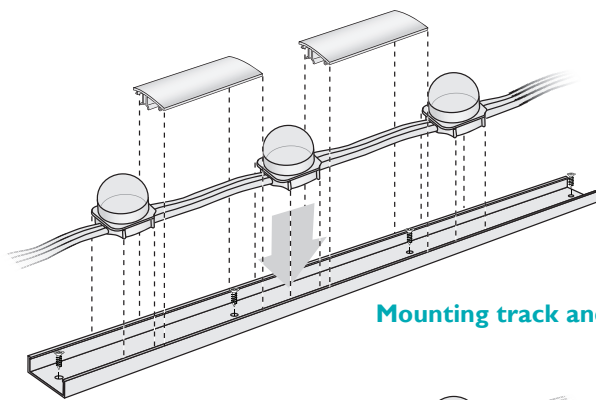
Make sure the power is OFF before mounting and connecting eW Flex Micro fixtures.

1. Using a pencil or chalk line, mark a center-line path for the nodes to follow.
2. (Optional) To install mounting track, cut the track to the desired length with a saw or snips. Using flathead screws suitable for the mounting surface, drive screws through the plastic track into the attaching surface. Recommended maximum spacing between screws is 406 mm (16 in). Snap optional spacers into the track to hide mounting hardware and wires.

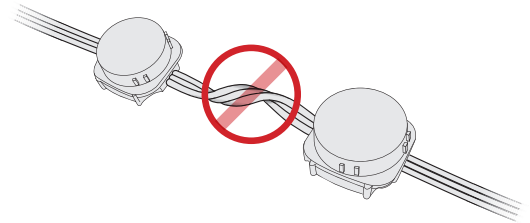
3. (Optional) Ensure that the spacing between single node mounts is sufficient to accommodate cable length between nodes and to allow for cable bending as necessary.

Using double-sided tape on the base of the mounts, adhere the mounts to the attaching surface. Reinforce installation with #6 flathead screws suitable for the mounting surface.

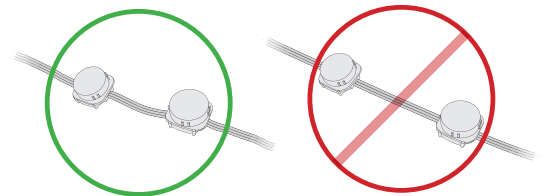
4. If using mounting track or single node mounts, push the fixture nodes into the mounts.
5. If mounting directly to a mounting surface, install eW Flex Micro strands using a suitable mounting method. For example, you can mount strands to a pipe or cable using plastic cable ties.



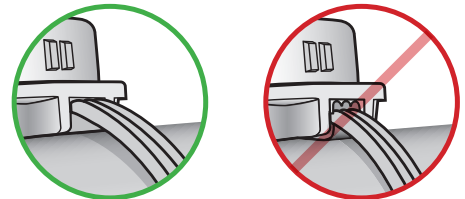
Do not twist or loop cable



Do not overstretch cable



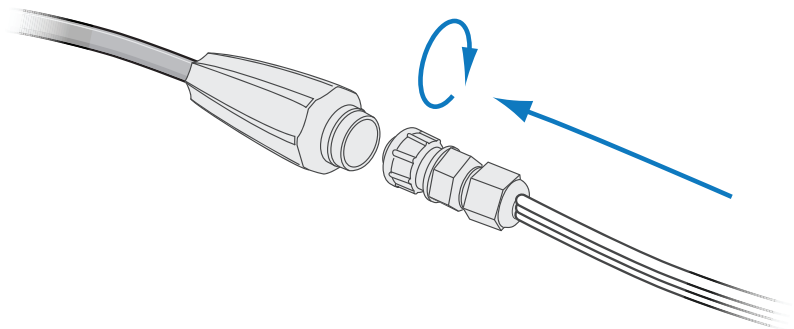
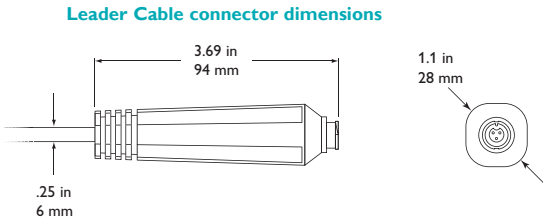
Do not pull cable away from node



Use caution when handling cable in sub-freezing temperatures



- Connect a Leader Cable to the three-pin connector on the end of each eW Flex Micro strand by turning the fixture strand's grommet clockwise. In wet or damp environments, tighten the grommet on the male connector sufficiently to ensure a watertight seal. Use caution when handling the Leader Cable or eW Flex Micro strand in sub-freezing temperatures, as the wiring can become brittle and break.



Maximum strands per power/data supply

PDS-60ca 24V	2
sPDS-60ca 24V	2
sPDS-480ca 24V	8

Make Power and Data Connections

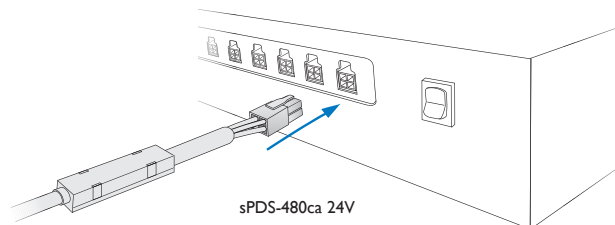
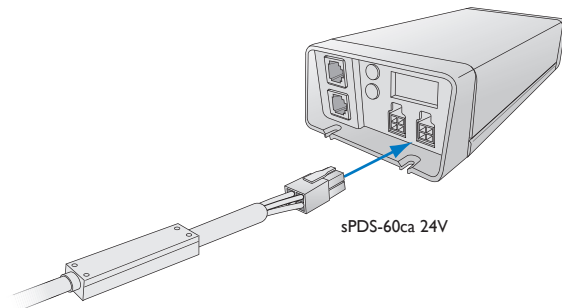
eW Flex Micro fixtures are designed to work with 24 VDC power/data supplies from Philips Color Kinetics. Power/data supplies send power and data to eW Flex Micro strands over a Leader Cable. Each sPDS-480ca 24V can power up to 8 fixture strands in Ethernet installation, while each PDS-60ca 24V or sPDS-60ca 24V can power up to two strands in either Ethernet or DMX installations.

PDS-60ca 24V is an IP66-rated power/data supply, suitable for use in damp and wet locations. Although sPDS-480ca 24V is rated for use in dry locations only, you can install it in a watertight enclosure for outdoor applications.

Make sure the power is OFF before connecting eW Flex Micro fixture strands.

Connecting to the sPDS-60ca 24V or sPDS-480ca 24V Power/Data Supply

- Connect a Leader Cable to an available power port on the back of the power/data supply housing.

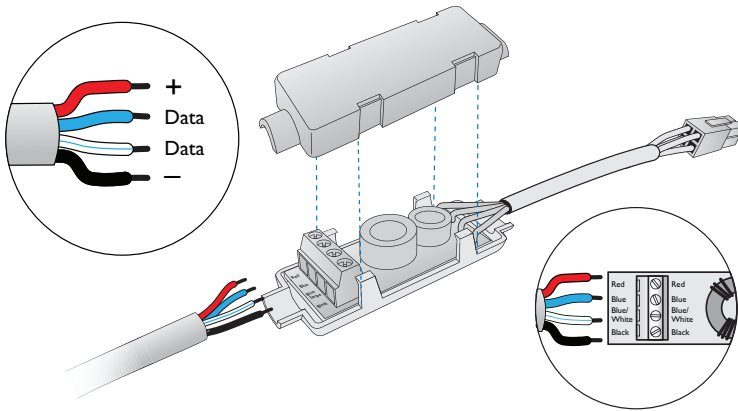


* If using conduit, remove the transmitter PCA junction box cover from the Leader Cable, as described here, before pulling the cable through the conduit, then replace the junction box cover.

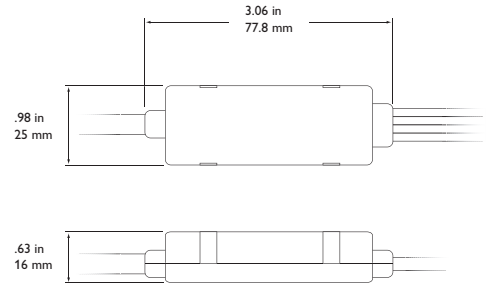
Connecting to the PDS-60ca 24V Power/ Data Supply

The PDS-60ca 24V is an IP66-rated power/data supply, suitable for use in damp and wet locations. The following procedure describes how to connect and seal a PDS-60ca 24V power/data supply for outdoor applications.

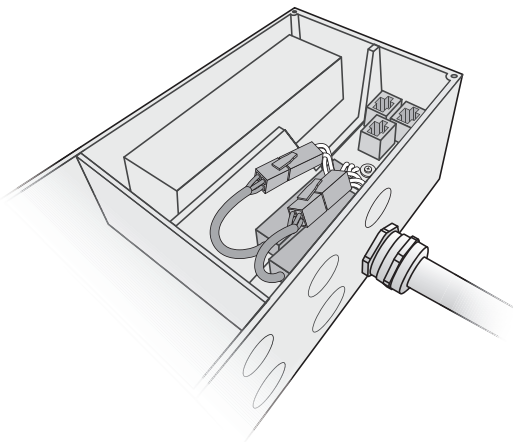
1. Remove the power/data supply cover.
2. Remove the cover of the transmitter PCA junction box on the Leader Cable by expanding the four tabs on the side and sliding the cover from the base.
3. Connect line, common, ground, and data to the provided terminal block, then replace the cover of the transmitter PCA junction box.




Transmitter PCA junction box dimensions

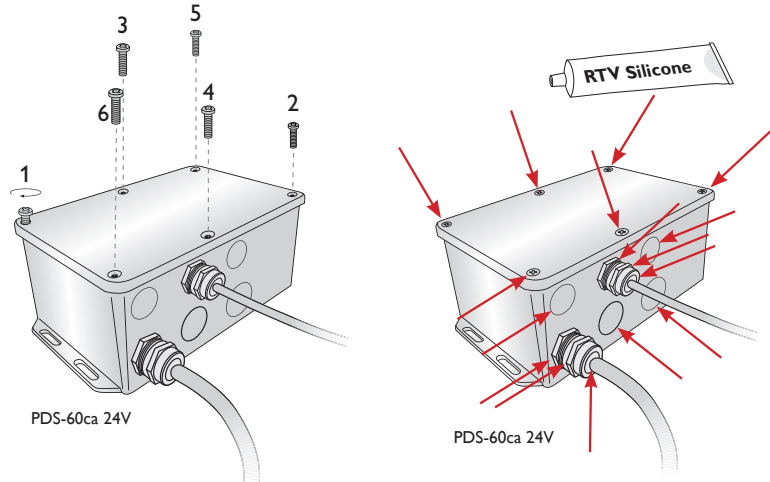


4. Connect the Leader Cable connector to an available port inside the power/data supply housing.



 You can download the QuickPlay Pro software and the Addressing and Configuration Guide from www.philipscolorkinetics.com/support/addressing/

- Secure the power/data supply cover. If installing in a wet or damp location, seal the power/data supply with electronics-grade RTV silicone sealant.



- Repeat steps 1 – 5 for each power/data supply in the installation.

Address and Configure the Fixtures

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

Power/data supplies and controllers work together to stream data to the eW Flex Micro strands in your installation.

- Each individual eW Flex Micro node is assigned three sequential DMX addresses, one for red, one for green, and one for blue. A DMX universe consists of 512 addresses, so the maximum number of eW Flex Micro nodes that can be individually addressed in a DMX universe is 170 ($170 \times 3 = 510$).

When using a PDS-60ca 24V power/data supply with DMX control, you program the power/data supply rather than addressing the eW Flex Micro strings directly. You use SmartJack Pro (or iPlayer 3) with QuickPlay Pro addressing software to set a base DMX address for the power/data supply, and to specify the node quantity of each attached eW Flex Micro strand.

For lighting designs where nodes work in unison, all nodes should be set to the same DMX addresses. For dynamic light show designs that show different color temperatures on different nodes simultaneously, you must assign unique DMX addresses to each node. Starting with its base DMX address, PDS-60ca automatically assigns addresses to each eW Flex Micro node in sequence, from the first node on output port 1 through the last node on output port 2.

Because you are limited to 170 uniquely addressed nodes per DMX universe (less than four strands of 50 nodes each), Ethernet is the preferred environment for video displays and dynamic lighting effects.

- Each Ethernet-based power/data supply comes pre-programmed with a unique IP address, so the power/data supply effectively functions as its own universe. When creating a light map with a controller or media server such as Light System Manager or Video System Manager Pro, each eW Flex Micro node automatically receives a unique identifier.

You can discover all power/data supplies by IP address using QuickPlay Pro, Light System Manager, or Video System Manager Pro. For large installations, and especially for video displays, we recommend giving power/data supplies meaningful IP addresses to streamline installation, mapping, testing, and troubleshooting. When readdressing power/ data supplies, you will need the layout grid you created when you recorded each power/data supply's IP address during installation planning.

For complete details on addressing and configuring fixtures, controllers, and power /data supplies, refer to the *Addressing and Configuration Guide* or the User Guide or Specification Sheet for your controller or power/data supply.

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