

HanleyLED

# KESTREL STIK

High-efficacy and output cabinet sign solution



Kestrel Series

## Before You Begin

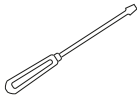
Determine your light bar mounting method. Are you using pre-existing sockets to mount? If so, End Cap for HO Sockets are included with all sizes of Kestrel Stiks. For a new construction, simply use in conjunction with optional mounting brackets.

# STOP READ THESE INSTRUCTIONS COMPLETELY AND CAREFULLY

### Tools required



Tape measure



Screwdriver



Electric drill



SwiftConnect



### Components

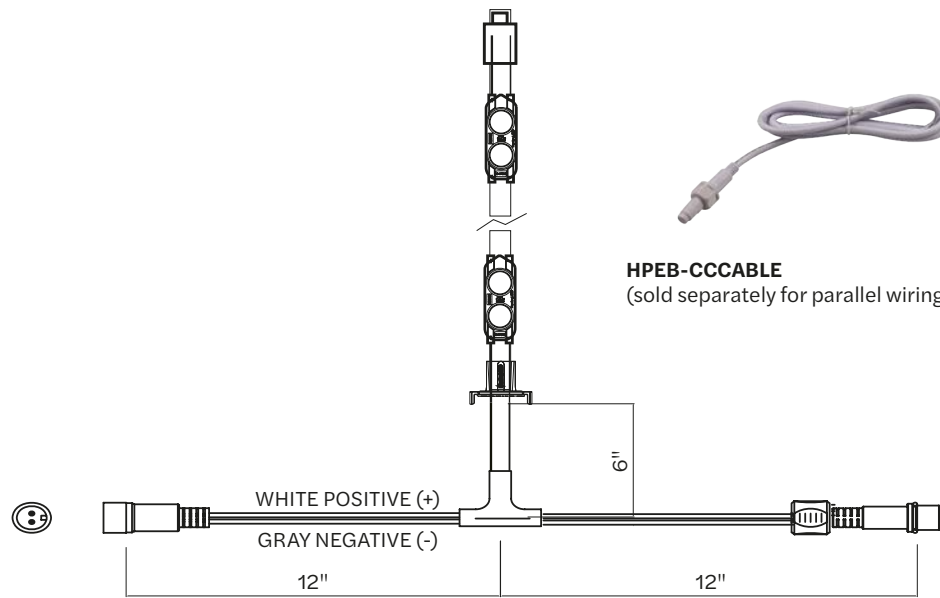


Kestrel Stik, 1-sided bar **HLED-1SXX**

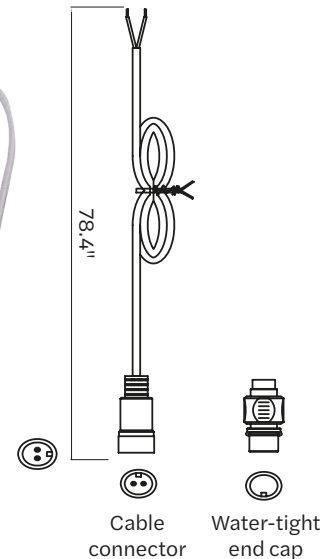


Kestrel Stik, 2-sided bar **HLED-2SXX**

24V Power Supply  
(sold separately)



**HPEB-CCCABLE**  
(sold separately for parallel wiring)



- End cap for HO Sockets included with all sizes
- For new construction simply use in conjunction with optional mounting brackets
- Kestrel Stiks come with a water tight SwiftConnect for faster installation



Specifications subject to change without notice.



HanleyLED

# KESTREL STIK

High-efficacy and output cabinet sign solution



Kestrel Series

## Tools required



End Cap for HO Socket  
(included with all sizes)



Flex Bracket  
(for curved cabinets/angled sides)



Join Bracket  
(included with sizes over 60")



Speed Mount Bracket HLED-KSSMB  
(optional, ideal for new construction)  
\*sold individually, QTY 1 pc.

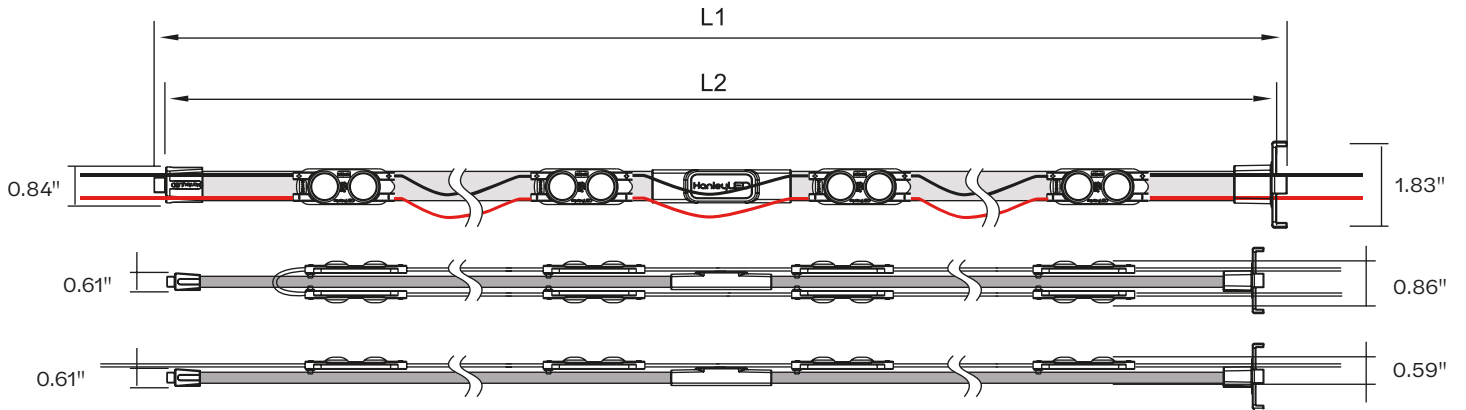


HO Socket Stabilizer  
(included with all sizes)



Tombstone Socket Stabilizer  
HLED-KSSTSS (optional)

## Stik Dimensions



SKU	L1	L2
HLED-KSS2S24	21.91"	21.45"
HLED-KSS1S30	27.91"	27.45"
HLED-KSS2S30		
HLED-KSS1S36	39.91"	39.45"
HLED-KSS2S36		
HLED-KSS2S42	39.91"	39.45"
HLED-KSS1S48	45.91"	45.45"
HLED-KSS2S48		
HLED-KSS1S60	57.91"	57.45"
HLED-KSS2S60		
HLED-KSS1S64	61.91"	21.45"
HLED-KSS2S64		27.45"

SKU	L1	L2
HLED-KSS1S72	69.91"	69.45"
HLED-KSS2S72		
HLED-KSS1S84	81.91"	81.45"
HLED-KSS2S84		
HLED-KSS1S96	93.91"	93.45"
HLED-KSS2S96		
HLED-KSS1S108	105.91"	105.45"
HLED-KSS2S108		
HLED-KSS1S117	114.91"	114.45"
HLED-KSS2S117		
HLED-KSS1S120	117.91"	117.45"
HLED-KSS2S120		

Specifications subject to change without notice.



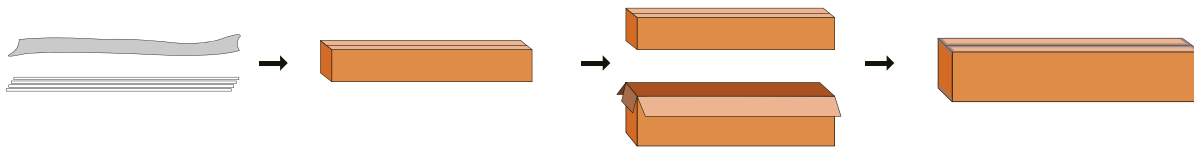
HanleyLED

# KESTREL STIK

High-efficacy and output cabinet sign solution



## Packaging



6 Kestrel Stiks per box | 12 Kestrel Stiks per case

Your power saving, labor saving, cost saving Kestrel Stik is ready to go out of the package. Each Stik includes our patented cap design for HO socket retrofits and HO Socket Stabilizer. 64inch Stiks and larger also come with a Joint Bracket. Kestrel Stiks can mount with aluminum angle bars or our new construction mounting brackets.

SKU	LED Lamp Cross Reference	Module Quantity per Stik	Watts (W)	Lumens (lm)	Actual Size
HLED-KSS2S24	F24HO	8	9.6 W	1584	21.91"
HLED-KSS1S30	F30HO	5	6 W	990	27.91"
HLED-KSS2S30	F30HO	10	12 W	1980	
HLED-KSS1S36	F36HO	6	7.2 W	1188	33.91"
HLED-KSS2S36	F36HO	12	14.4 W	2376	
HLED-KSS1S42	F42HO	14	16.8 W	2772	39.91"
HLED-KSS1S48	F48HO	8	9.6 W	1584	45.91"
HLED-KSS2S48	F48HO	16	19.2 W	3168	
HLED-KSS1S60	F60HO	10	12 W	1980	57.91"
HLED-KSS2S60	F60HO	20	24 W	3960	
HLED-KSS1S64	F64HO	10	12 W	1980	61.91"
HLED-KSS2S64	F64HO	20	24 W	3960	
HLED-KSS1S72	F72HO	12	14.4 W	2376	69.91"
HLED-KSS2S72	F72HO	24	28.8 W	4752	
HLED-KSS1S84	F84HO	14	16.8 W	2772	81.91"
HLED-KSS2S84	F84HO	28	33.6 W	5544	
HLED-KSS1S96	F96HO	16	19.2 W	3168	93.91"
HLED-KSS2S96	F96HO	32	38.4 W	6336	
HLED-KSS1S108	F108HO	18	21.6 W	3564	105.91"
HLED-KSS2S108	F108HO	36	43.2 W	7128	
HLED-KSS1S117	F117HO	16	19.2 W	3168	114.91"
HLED-KSS2S117	F117HO	32	38.4 W	6336	
HLED-KSS1S120	F120HO	20	24 W	3960	117.91"
HLED-KSS2S120	F120HO	40	48 W	7920	

Specifications subject to change without notice.



## Retrofit Installation Guide

### Kestrel Stik

This guide is designed to aid in the installation of HanleyLED's Kestrel Stik. Skilled trades people that are familiar with general construction, electrical, and sign installation techniques should do the installation. Licensed electricians should provide all installation and hook-up of both the primary and secondary input/outputs of the HanleyLED power supply. All installation and hook-up should be done in accordance with all National and Local codes and permits. In no way is this document intended to construe warranty or fitness of use of the products described, nor is it intended to provide safety instruction for those installing the product.

THE FIELD INSTALLATION OF THIS RETROFIT SYSTEM INTO A SIGN IS SUBJECT TO THE ACCEPTANCE OF LOCAL INSPECTION AUTHORITY.

**CAUTION:** TURN OFF POWER TO THE SIGN BEFORE INSPECTING OR REMOVING EXISTING LIGHT SOURCE. THE POWER MUST REMAIN OFF WHILE INSTALLING THE LED RETROFIT KIT.

### Tools Required

- Wire cutter & strippers
- Marking pens
- Measuring tape
- Drill
- Standard hardware and supplies in addition to the HanleyLED modules installation guides (UL listing may be required on certain items).

## Prepping the Channel Letter or Cabinet

### Step 1

Remove existing neon or fluorescent bulbs by having a licensed electrician disconnect and remove the neon transformers or fluorescent ballasts. Remove existing neon and standoffs or fluorescent lamps. Leave fluorescent sockets in cabinets with leads disconnected. This should leave an empty channel letter or cabinet.

ALL MATERIALS REMOVED MUST BE DISPOSED OF IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL LAWS.

### Step 2

Using a non-oil based cleaner, clean the back surfaces of the channel letter or cabinet where the LED modules will be mounted. This is an important step for good adhesion of HanleyLED modules mounting tape.

### Step 3

Installer should examine all parts that are not intended to be replaced by the retrofit kit for damage and replace any damaged parts prior to installation of the retrofit kit. Do not make or alter any open holes in an enclosure of wiring or electrical components during kit installation. Any existing holes in the letters or cabinet that will not be used in the installation of HanleyLED modules should be patched to avoid water damage. Opening smaller than 0.5" diameter may be sealed with the appropriate amount of rated caulk or sealant. Openings larger than 0.5" should be patched using an aluminum or zinc coated steel patch with rivets and sealant.

### Step 4

Proceed with the appropriate HanleyLED module installation guide for your specific product.



## Layout Guidelines

Single-sided depth	Double-sided depth	Space between stiks
3"	6"	8"
4"	8-9"	9"
5-6"	10-13"	12"
7"	14-15"	15"
8-9"	16-18"	20"
10-15	20-30"	22"

If cabinet exceeds 15" single-sided depth, or 30" double-sided depth, mount stiks 8" away from the face on both sides and space 12".

## Power Supply Load Chart & Cascading (Kestrel Stiks in a series) Information Guidelines

SKU	Watts/Stik	Power Supplies (24V)						Cascading Run Information
		60W H60W-PPS524V H60W-PPSEM24V	96W H96W-SD-24	150W H150W-PPS524V H150W-PPSEM24V	192W H192W-SD-24	240W H240W-PPS524V	288W H288W-SD-24	Max series wired
Max number of Kestrel Stiks per power supply								
HLED-KSS2S24	9.6W	6	10	14	20	24	30	N/A
HLED-KSS1S30	6W	10	16	24	32	40	48	N/A
HLED-KSS2S30	12W	5	8	12	16	20	24	
HLED-KSS1S36	7.2W	8	13	20	26	32	39	N/A
HLED-KSS2S36	14.4W	4	6	10	12	16	18	
HLED-KSS2S42	16.8W	3	5	8	10	12	15	N/A
HLED-KSS1S48	9.6W	6	10	14	20	24	30	N/A
HLED-KSS2S48	19.2W	3	5	6	10	12	15	
HLED-KSS1S60	12W	5	8	12	16	20	24	N/A
HLED-KSS2S60	24W	2	4	6	8	8	12	
HLED-KSS1S64	12W	5	8	12	16	20	24	N/A
HLED-KSS2S64	24W	2	4	6	8	8	12	
HLED-KSS1S72	14.4W	4	6	10	12	16	18	N/A
HLED-KSS2S72	28.8W	2	3	4	6	8	9	
HLED-KSS1S84	16.8W	3	5	8	10	12	15	N/A
HLED-KSS2S84	33.6W	1	2	4	4	4	6	
HLED-KSS1S96	19.2W	3	5	6	10	12	15	N/A
HLED-KSS2S96	38.4W	1	2	2	4	4	6	
HLED-KSS1S108	21.6W	2	4	6	8	8	12	N/A
HLED-KSS2S108	43.2W	1	2	2	4	4	6	
HLED-KSS1S117	19.2W	3	5	6	10	12	15	N/A
HLED-KSS2S117	38.4W	1	2	2	4	4	6	
HLED-KSS1S120	24W	2	4	6	8	8	12	N/A
HLED-KSS2S120	48W	1	2	2	4	4	6	

HanleyLED

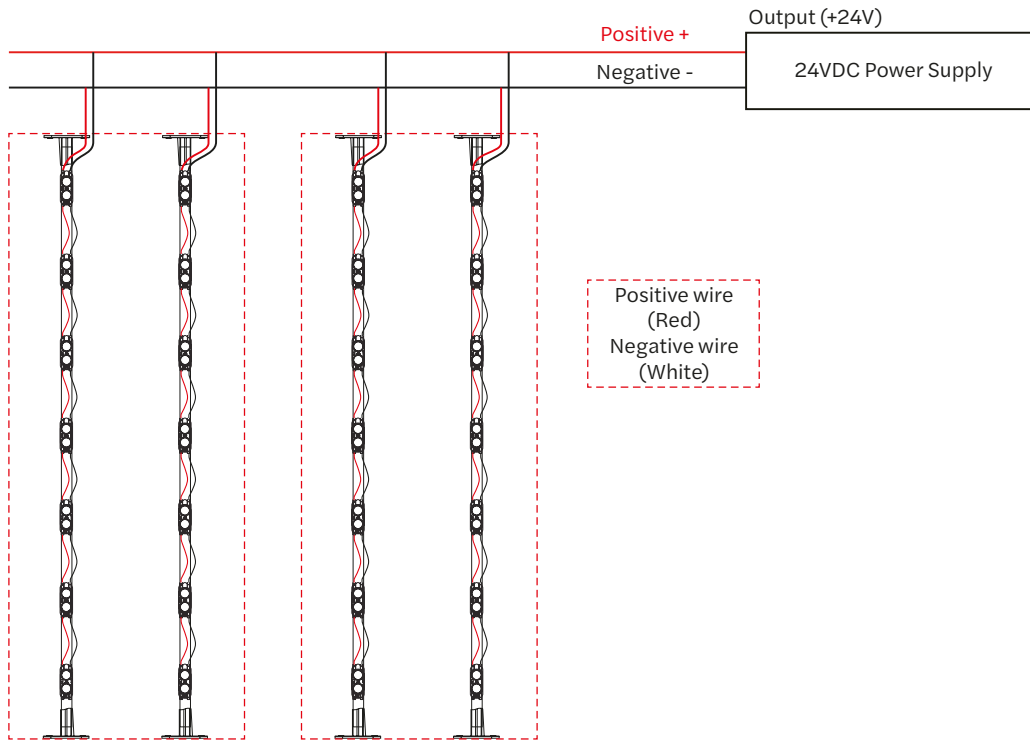
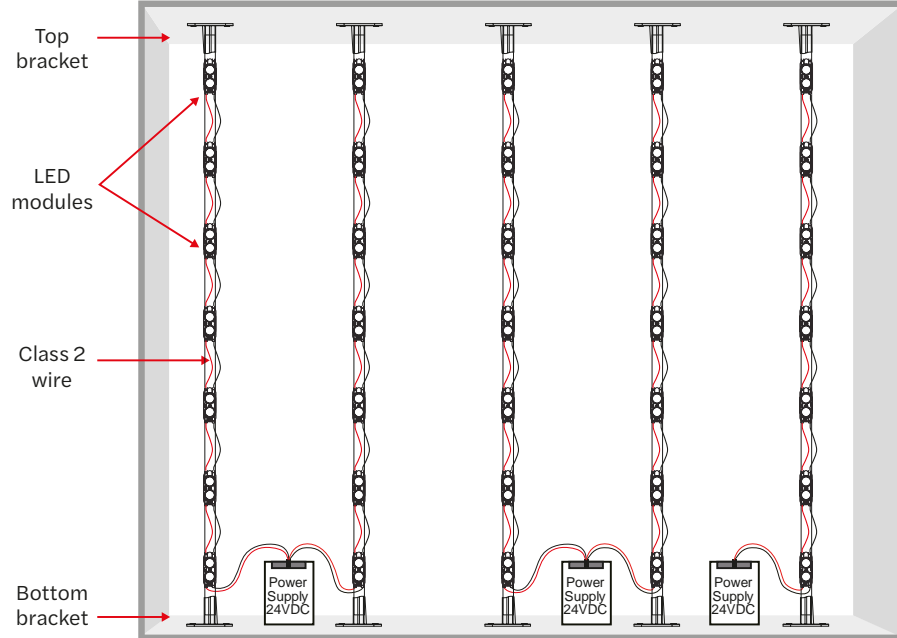
# KESTREL STIK

High-efficacy and output cabinet sign solution



## Wiring and Installation Guidelines

Place Kestrel Stiks in sign cabinet and screw in the desired brackets. Add silicone for extra stability.



**NOTE:** All materials removed must be disposed of in accordance with applicable local, state, and federal laws.

**CAUTION:** Turn off power to sign before inspecting or removing existing light source. Power must remain off while installing Concorde Cabinet System.

Specifications subject to change without notice.

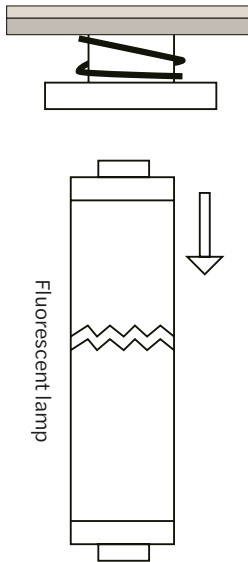


## Wiring and Installation Guidelines, Double-sided Stiks

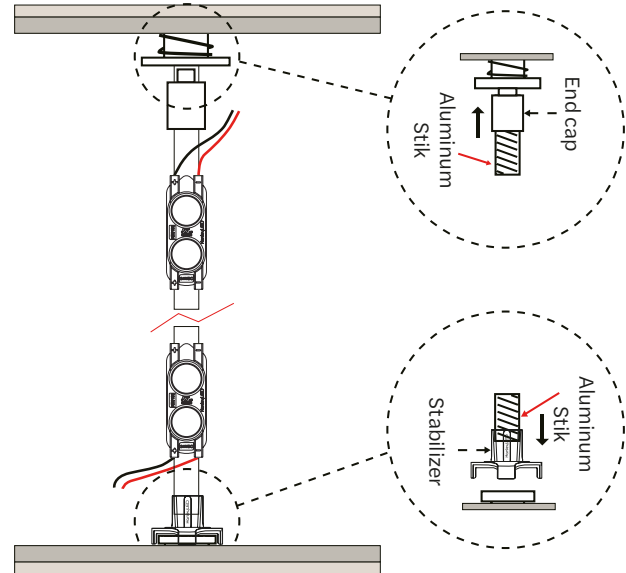
### Retrofit Installation 1

Step 1: Cut off power.

Step 2: Remove existing florescent lamps.



Step 3: Place end cap for HO Socket and HO Socket Stabilizer on each end of Kestrel Stik.



### Retrofit Installation 2

If fluorescent lamp support base is like "Diagram A", HO sockets will need to be used to install Stik.

Diagram A

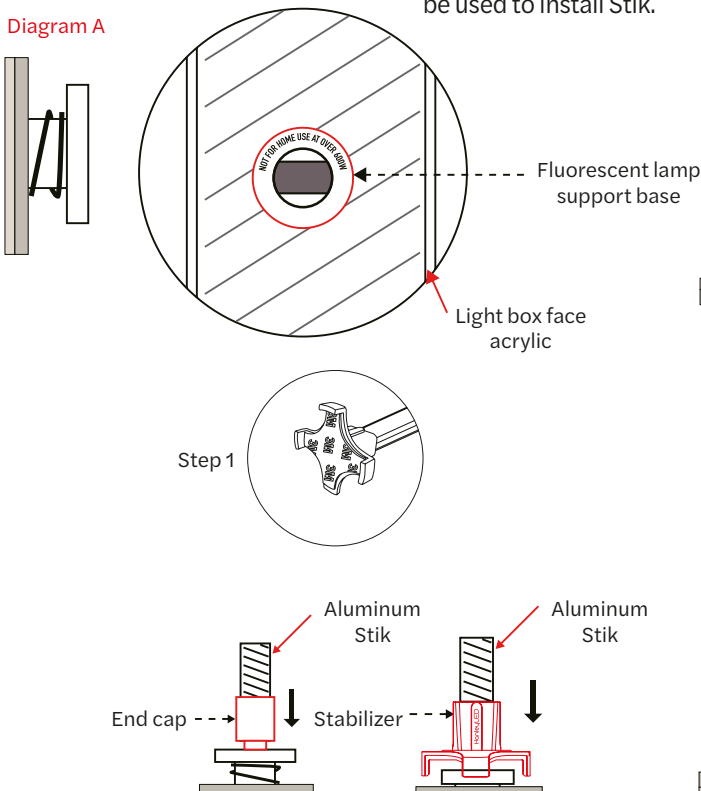
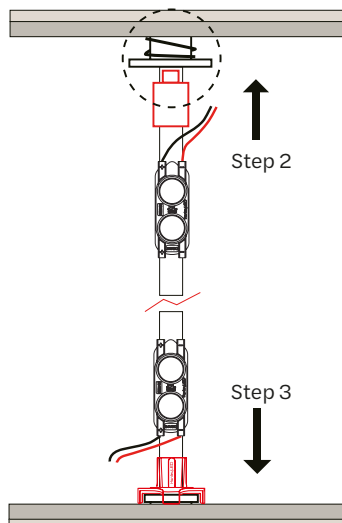


Diagram B

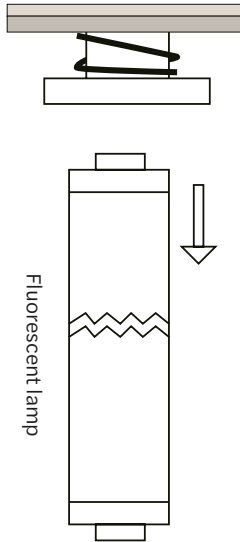


## Wiring and Installation Guidelines, Single-sided Stiks

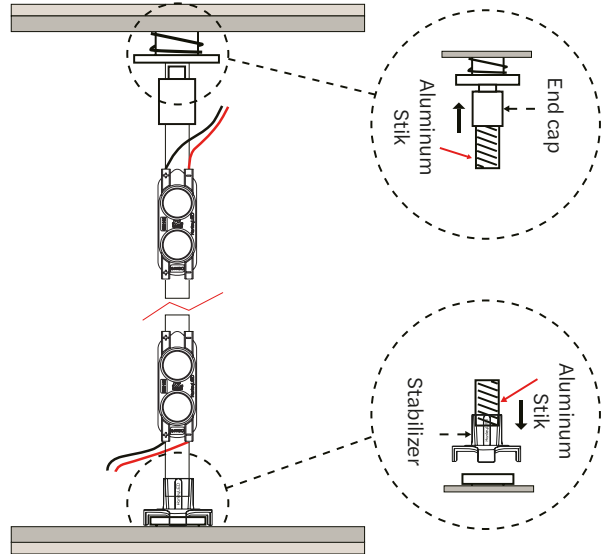
### Retrofit Installation 1

Step 1: Cut off power.

Step 2: Remove existing florescent lamps.

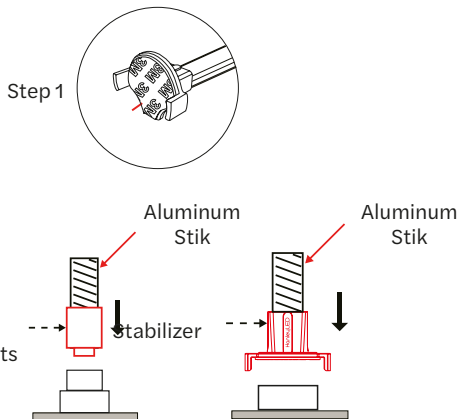
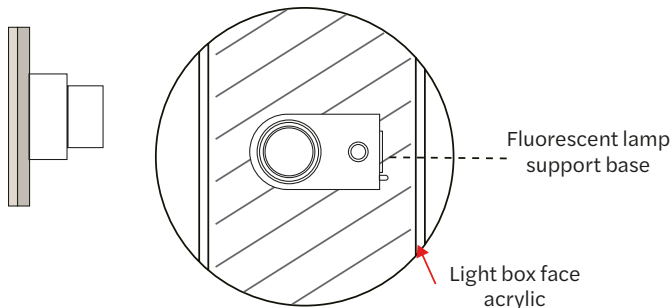


Step 3: Place end cap for HO socket and HO Socket Stabilizer on each end of Kestrel Stik.

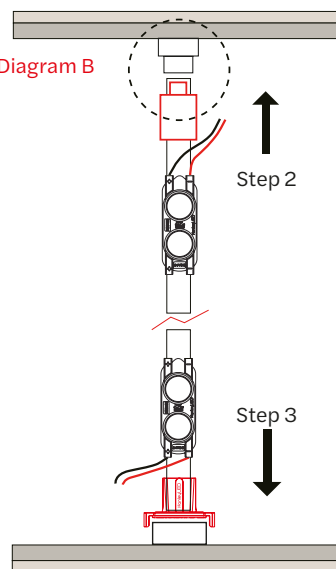


**Retrofit Installation 2** If fluorescent lamp support base is like "Diagram A", HO sockets will need to be used to install Stik.

### Diagram A



### Diagram B





HanleyLED

# KESTREL STIK

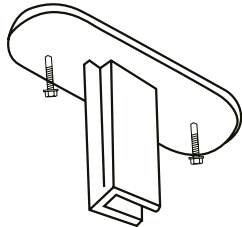
High-efficacy and output cabinet sign solution



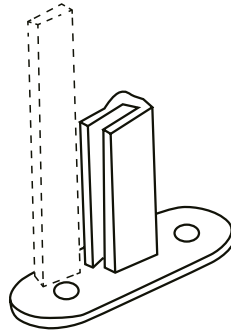
## Wiring and Installation Guidelines, Single and Double-sided Stiks

### New Installation

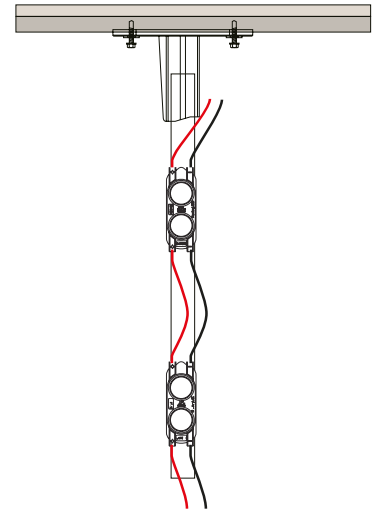
Step 1: Attach upper bracket and lower bracket



Step 2: Slide into mounting bracket.



Step 3: Screw mounting brackets into sign cabinet.



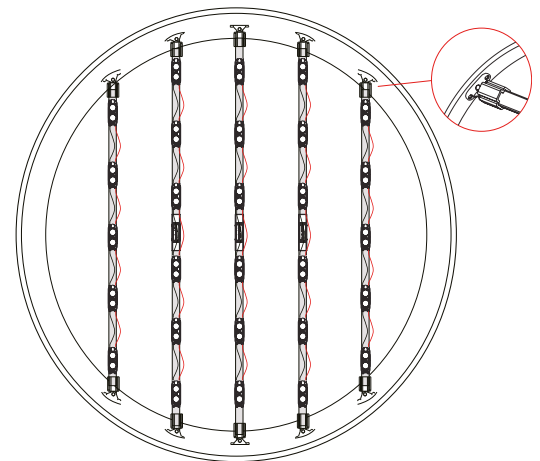
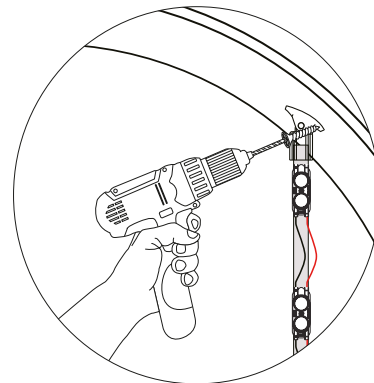
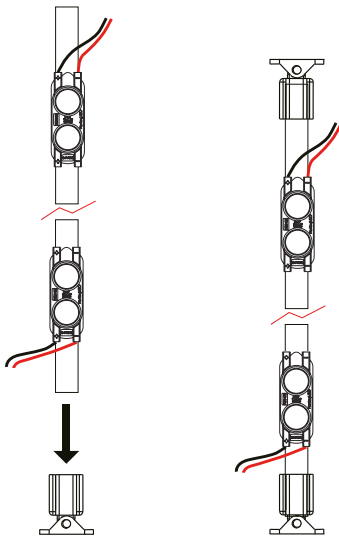
64", 6-ft, 7-ft, 9-ft, 10-ft, and 117" Stiks will require a joining (included with Kestrel Stiks).



## Curved Shape Sign Cabinet Installation

Step 1: Attach Flex Bracket to Kestrel Stik.

Step 2: Screw brackets into place.



**WARNING** – Risk of fire or electric shock. LED Retrofit Kit installation requires knowledge of sign electrical systems. If not qualified, do not attempt installation. Contact a qualified electrician.

**WARNING** – Risk of fire or electric shock. Install this kit only in host signs that have been identified in the installation instructions and where the input rating of the retrofit kit does not exceed the input rating of the sign.

**WARNING** – Risk of fire or electric shock. Installation of this LED retrofit kit may involve drilling or punching of holes into the structure of the sign. Check for enclosed wiring and components to avoid damage to wiring and electrical parts.

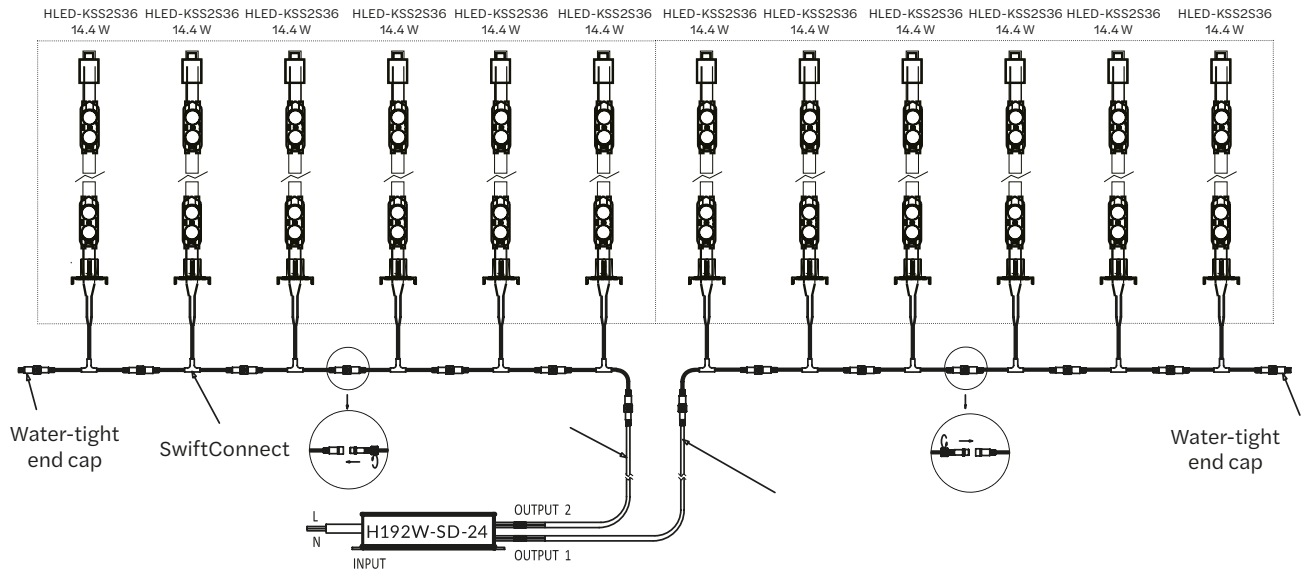
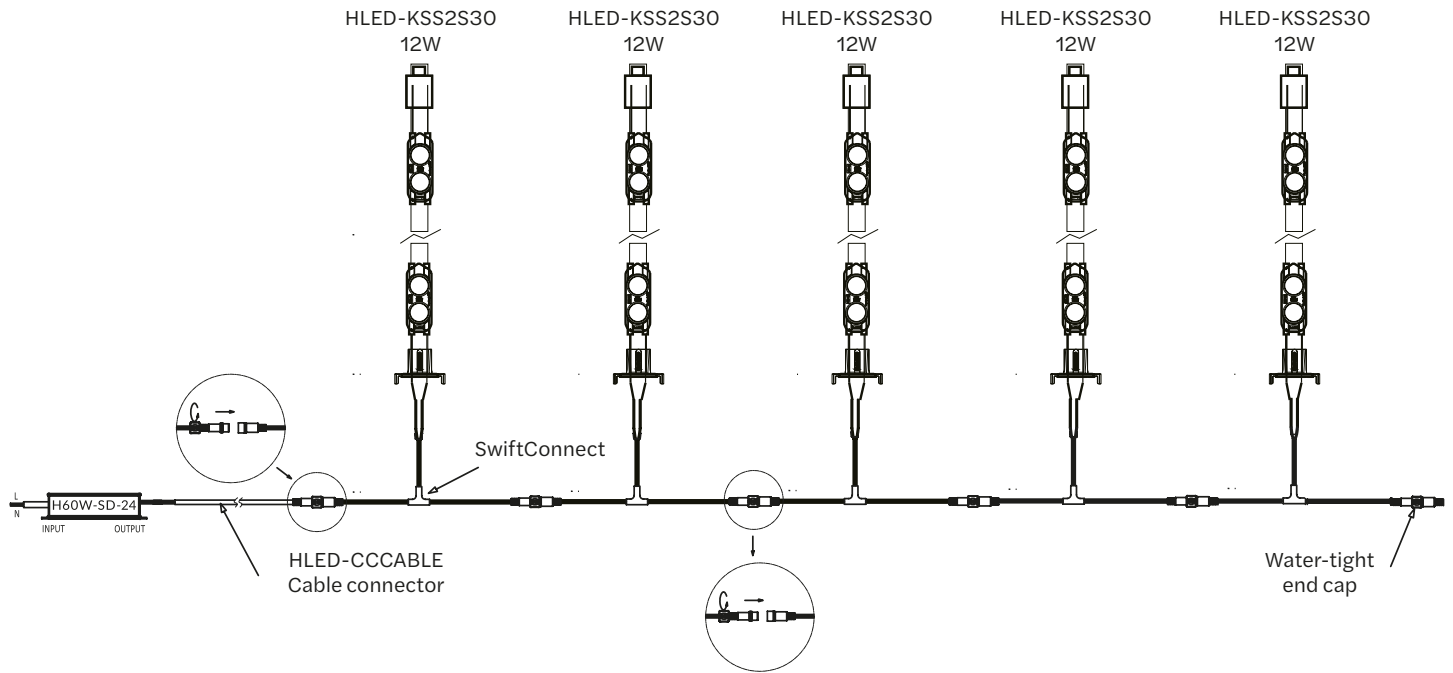
**WARNING** – To prevent wiring damage or abrasion, do not expose wiring to edges of sheet metal or other sharp objects.

Specifications subject to change without notice.





## Wiring and Installation Guidelines with Swift Connect



HanleyLED

# KESTREL STIK

High-efficacy and output cabinet sign solution



## Warranty

SKU	Warranty period
HLED-KSS2S24, HLED-KSS2S30, HLED-KSS2S36, HLED-KSS2S42, HLED-KSS2S48, HLED-KSS2S60, HLED-KSS2S64, HLED-KSS2S72, HLED-KSS2S84, HLED-KSS2S96, HLED-KSS2S108, HLED-KSS2S117, HLED-KSS2S120	10-year product, 5-year limited labor

Above warranty period is only for products which are used inside of waterproof light boxes and valid only when used as a system with HanleyLED Premium Power Supplies.

## Cautions

### Cautions for installation and use:

- Make sure installing surface is clean and suitable for sticking prior to installation.
- Inadequately connecting the "+" and "-" of module to those of power supply output might ruin your product.
- Full attention should be paid to wire polarity when connecting two or more strings of product during installation.
- Maximum cascade length is 142" ; not recommended to exceed this cascading length.
- Standard operating temperature: -40° to 60°C.

### Cautions for selection of other parts:

- Please ensure that output voltage of using power supply is DC (24+5%)V, and rated power supply is recommended to underload by 20%. (HanleyLED "PPS5" and "PPSEM" Power Supplies can be loaded to 100% if absolutely needed with no effect to warranty).
- During installation, please ask qualified person to count and select suitable cable according to diameter and length of wire when connecting cable needs to be extended, otherwise, low input voltage to product may occur, or fire hazard due to overheated cable.
- Prohibited to use any acid or alkaline glue to fix this product.

## Troubleshooting

Malfunctions	Possible causes	Solutions
All LEDs do not work.	Power supply did not connect to power grid.	Power on.
	No electricity due to short-circuit of external power supply.	Remove malfunction caused by short-circuit, power on again.
	Wires of bar connect to power supply output reversely.	Check connection and ensure wires are connected correctly.
Part of LEDs do not work.	Part of power supplies do not have output.	Check power supply system.
	Part of bar wires have malfunction.	

Malfunctions	Possible causes	Solutions
Brightness of LEDs is weak or uneven.	Overloaded power supply.	Replace it with higher power supply.
	Power loss of power circuit is huge or power loss to each existing circuit.	Ensure working voltage of bars is within +5%V of rated voltage (1. Shorten length of wires between first bar and power supply or replace with wires with bigger diameter; 2. Ensure cascading quantity of string is less than or equal to allowed maximum cascading quantity, and each bar cascading quantity is well-balanced).
	Too many bars in series/cascade.	Lessen cascading quantity for bar and ensure quantity for each electrical circuit is within maximum cascading quantity.
LEDs are blinking.	Poor wiring connections.	Check all wiring connections immediately.
	Failures in power supply.	Replace power supply.

**WARNING** – Risk of fire or electric shock. LED Retrofit Kit installation requires knowledge of sign electrical systems. If not qualified, do not attempt installation. Contact a qualified electrician.

**WARNING** – Risk of fire or electric shock. Install this kit only in host signs that have been identified in the installation instructions and where the input rating of the retrofit kit does not exceed the input rating of the sign

**WARNING** – Risk of fire or electric shock. Installation of this LED retrofit kit may involve drilling or punching of holes into the structure of the sign. Check for enclosed wiring and components to avoid damage to wiring and electrical parts.

**WARNING** – To prevent wiring damage or abrasion, do not expose wiring to edges of sheet metal or other sharp objects.

Do not make or alter any open holes in an enclosure of wiring or electrical components during kit installation. Only those open holes indicated in the photographs and/or drawings may be made or altered as a result of kit installation. Repair and seal any unused openings in the electrical enclosure. Openings greater than 0.5" diameter require a metal patch secured by screws or rivets and caulked with non-hardening caulk. Smaller openings may be sealed with non-hardening caulk.

