

5.F) Secure power unit in place with four screws.

5.G) Connect the power unit to 120VAC junction box.

(Note: HRL-06-PFC-96 power unit is equipped with 1/2" ENT conduit fitting. It is required to use 1/2" nonmetallic conduit between the junction box and the power unit.)

5.H) Repeat steps 5.A - 5.G for all load groups.

5.I) Verify if disconnect switch is present. National Electrical Code (NEC) requires disconnect switch. If disconnect switch is not present, it must be installed between main breaker and first power unit.

5.J) Test by turning main power on.

(Note: Do not touch any metal parts while testing)

LOW VOLTAGE WIRING USING HRL-06-PFC-24 Power Unit

5.A) The HRL-06-PFC-24 is an 8VAC power unit, HYPERION R-Lite is an AC driven system.

5.B) The power supply should be placed within 25 feet of the Hyperion R-Lite Strip. Should you be required to locate the power supply further away please consult with LUMIFICIENT.

5.C) Place the power unit between two selected load groups. You should always balance the load of the power supply, if you are powering 25 feet of R-Lite strip, where two power connectors are required, you should seek to balance the load, per power connector as close as possible. Run a pair of 10 or 12 AWG Class 2 rated power wires from the power unit to the ends of the selected groups. 12 AWG Class 2 wires can be purchased from Lumificient in 50 foot spools.

(Note: Using higher than 12AWG wire will result in increased voltage drop.)

(Note: All secondary wiring must comply with Article 725 of the 2002 National Electrical Code (NEC). Class 3 PLTC wire can be used as a substitution of Class 2 wire. Please refer to NEC 725.61 "Cable Substitution Hierarchy.")

(Note: HRL-06-PFC-24 power unit must be installed in NEMA 3R enclosure. Exit point of low voltage wiring must be secured against water entry into the box (rain tight bushing, cord grip, etc.)

(Note: For dry or damp locations, HRL-06-PFC-24 power unit must be installed in NEMA 1 rated enclosure or inside of all metallic enclosure.)

5.D) Connect power connector leads to power wires (parallel electrical connection) by using "tap and run" IDC connectors.

(Note: Do not use wire nuts for connecting power connectors to power wires!)

5.E) Use wire nuts ONLY to insulate end of the power wires.

5.F) Secure power wires inside the wire way or on the wall with wire clamps

(Note: All free hanging wires must closely follow the building structure and must be supported by wire clamps every 4.5 ft. and at least 1ft from the power unit.)

5.G) Connect blue and brown from the HRL-06-PFC-24 power unit to power wires by using "tap and run" IDC connectors.

(Note: IMPORTANT: Maximum load is 25 linear feet per power unit.)

(Note: Do not connect outputs in series or parallel.)

5.H) Connect the power unit to 120VAC junction box.

(Note: It is required to use UL rated metallic or nonmetallic conduit between the junction box and the power unit enclosure.)

5.I) Repeat steps 5.A - 5.G for all load groups.

5.J) Verify if disconnect switch is present. National Electrical Code (NEC) requires disconnect switch. If disconnect switch is not present, it must be installed between main breaker and first power unit.

5.K) Test the runs by turning main power on.

(Note: Do not touch any metal parts while testing. Please refer to the Typical Layouts document for examples of installations)

GUIDELINES FOR DIMMING THE HYPERION R-LITE SYSTEM

Introduction

The HYPERION R-Lite™ System is powered by a toroidal transformer. As a result, R-Lite™ lends itself to being dimmed very easily by Phase-Control dimmers. However, a successful installation will depend on the lighting designer paying attention to some important details.

1.) The phase control dimmer must be classified as a "Magnetic Low Voltage" dimmer. These are manufactured by such companies as Lutron, Leviton, Cooper Lighting, etc... Generally, these are rated for either 450W (600VA) or 750W (1000VA). The choice between power ratings will depend on the footage of R-Lite™ the designer will install. Since R-Lite™ consumes approximately 1W of power per foot, the calculation is very easy.

Example: A project calls for using 150' of R-Lite™. The power consumed for the whole system is therefore approximately 150W. The dimmer that should be specified should be of the 450W type since the total power is well below 750W.

2.) As is the case with most phase control dimmers, the designer must connect a minimum load for it to function properly. Thus, in cases where the total power consumed is below this minimum, the dimmers discussed here may not be used. Please review the chart below for minimum loads listed by Lumificient transformer type.

Transformer Part #	Minimum Load (feet)	Maximum Load (feet)
HRL-PFC-96	20' per terminal	35' per terminal (2)
HRL-PFC-24	20'	25'

Other Considerations

Most phase control dimmers utilize triacs as part of their control circuitry. The triac is held in an off position until the incoming AC waveform reaches a certain point, and then the triac turns on such that current may reach the load. Even when the dimmer is in its fully-on state, part of the AC waveform is still cut off. This is true with incandescent as well as LED lighting. Thus, simply by using a phase control dimmer will most times decrease the HYPERION R-Lite™ system's maximum light output by approximately 10%-15%.

Typical Wiring and Installation

Lutron has provided a thorough application note for Low Voltage Lighting, and it can be found on lumificient.com. Please see web page for part numbers that are compatible with the HYPERION R-Lite™ system. Take caution to not order "Electronic Low Voltage" dimmers that are contained on that page. Only those listed in the "Magnetic Low-Voltage" column may be used. When using more than one transformer, the dimmer can be connected to several transformers in parallel.

For example, five HRL-07-PFC-96BM transformers may be connected to one 450W dimmer since the power consumed by the system is less than 450W ($P = 5 * 70W = 350W$).

ALL INSTALLATIONS MUST CONFORM TO LOCAL AND NATIONAL ELECTRICAL CODE. All of the information in this document is believed to be true and should be used only as a guide. Lumificient Corporation reserves the right to make changes to this document without notice. All installators must be confirmed to operate properly per application.

MAN.1108.LUMI.HRLa.V1.00

LUMificient
A Nexxus Lighting Company

HYPERION R-LITE^{accent}
FLEXIBLE LED ILLUMINATION SYSTEM

INSTALLATION MANUAL FOR AC SYSTEM

READ THIS MANUAL BEFORE PROCEEDING WITH THE INSTALLATION. FAILURE TO FOLLOW THE INSTALLATION INSTRUCTIONS MAY VOID YOUR WARRANTY!

INSTALLATION TIPS

- READ THE ENTIRE INSTALLATION MANUAL
- DO NOT EXCEED RECOMMENDED LENGTHS FOR WHAT THE DIFFERENT POWER SUPPLIES ARE CAPABLE OF DRIVING
- DO NOT EXCEED TOTAL OF 12 FOOT RUN - "THE 12 FOOT RULE"
- WHEN THE PLUG - IN POWER CONNECTION CAN NOT BE MADE IN THE CENTER OF THE STRIP, THEN THE MAXIMUM RUN LENGTH IS 12 FEET.

FOR FIRST TIME INSTALLS WE RECOMMEND THAT YOU CONSULT LUMIFICIENT PRIOR TO INSTALLATION TO ENSURE SUCCESS.

LUMIFICIENT PROVIDES PRODUCT WARRANTY ONLY, AND IS NOT RESPONSIBLE FOR INSTALLATION ERRORS.

TECHNICAL SUPPORT

Lumificient, a Nexxus Lighting Company
8752 Monticello Lane N
Maple Grove, MN 55369
USA
tel 763.424.3702
fax 763.390.3135
email technical@lumificient.com

HYPERION R-Lite Accent is one of the most advanced and versatile LED illumination products on the marketplace today. It is a proven performer in the harshest environments having been utilized for outdoor Sign Illumination for over 8 years.

Today, HYPERION R-Lite is used in cove, under/over cabinet, light box, menu board, toe kick, display case, and for other accent illumination needs.

HYPERION R-Lite Accent is superior to other LED illumination products based upon its superior design, thermal management, even illumination, ease of installation and use, and true energy savings that it provides.

The versatility of the product leads to unlimited possibilities while the ease of installation provides significant savings when compared to nearly any other product. R-Lite uses a continuous flexible conductor carrier to electronically connect the LED modules, which can be mounted to the surface with adhesive that covers 100% of the strips backing. The flexible conductive tape is extremely strong and can be crimped to turn corners or adjusted to meet the needs of the application.

STEP 1 SURFACE PREPERATION

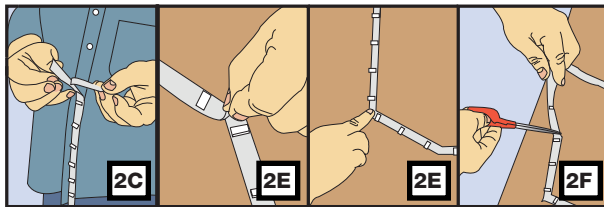


1.A) Surface must be free of dust, dirt, and grease. Use non-oil based solvent (409, alcohol) to clean surface. Area must be dry before application. HYPERION R-Lite™ bonds to all **non porous** surfaces.

(Note: Application temperature range: 32°F to 100°F or 0°C to 38°C)

(Note: For porous surfaces use Hyperion HY-Lite support clamps (HRL-SC). The support clamps can be purchased in packages of 50 (HRL-SC-P).)

STEP 2 INSTALLING THE HYPERION R-LITE STRIP



2.A) Determine Linear footage required for each area to be illuminated.

(Note: HYPERION Hy-Lite comes in 25 foot sections, so before beginning your application it is recommended that you review your plans and layout longer runs first. Please follow layout diagrams and if needed consult with a Lumificient representative. By doing this you will cut down on waste, maximize strip, and limit the need for added components)

2.B) BALANCE THE LOAD. When planning your installation please consider LOAD requirements. For optimal power distribution divide the load evenly between terminals 1 and 2. Minimum load per terminal is 10 linear ft. (Maximum load is 35 linear feet when power supply is located within 25ft of runs.)

2.C) Unroll necessary amount of HYPERION R-Lite strip and visually inspect the contents for shipping damage. Expose approximately 6 inches of the adhesive backing for installation by placing the strip between left and right thumb and forefingers and using a fingernail to be peeling the paper backing off the back of the strip.

(Note: Do not touch adhesive tape with greasy or wet hands!)

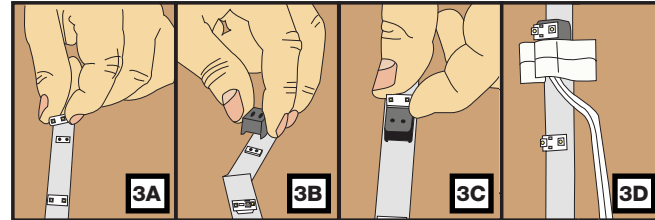
2.D) Adhere the strip inch by inch to non porous surface. It will take some time for the adhesive to bond to the surface (24-48 hours).

2.E) To make a curve, bend HYPERION R-Lite™ flexible conductor strip between the sockets. Pinch excess strip between thumb and forefinger together. After pinching adhere corner of the turn by firmly pushing with your forefinger.

2.F) To trim HYPERION R-Lite™ strip to desired length, cut strip with scissors directly between sockets.

(Note: Don't make cut near any socket, and don't use wire cutters to trim the strip. Doing this might cause damage.)

STEP 3 INSTALLING THE POWER CONNECTOR



3.A) Power Connector should be placed in the center of the run. Unplug the light module from the socket designated for the power connector. When removing an LED module, place thumb and forefinger on side edges of LED module and pull directly upwards until LED module is released from the socket.

3.B) With thumb and forefinger at base of the connector and aligned parallel with the strip, place connector pins into socket and lightly push down on top of connector with forefinger until the connection is secure. Plug - In Power Connector should be placed in the center of the run.

3.C) Plug in previously unplugged light module to the top of the power connector.

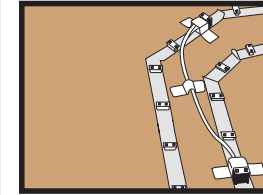
3.D) Secure the connector with the power connector holder. Secure connector cable with 1/4" wire clamp.

3.E) Connect plug - in power connector leads to 12 AWG Class 2 wire using the brown ICD connectors supplies with the Plug - In Power connector kits. The Class 2 wire leads to power supply.

(Note: FOR INTERNAL applications ONLY: Connect plug - in power connector leads to 12 AWG Class 2 wire using the brown ICD connectors supplies with the Plug - In Power connector kits. The Class 2 wire leads to power supply.)

(Note: When the plug - in power connection can not be made in the CENTER of the strip, then the maximum run length is 12 feet.)

STEP 4 INSTALLING THE JUMPER CABLE (OPTIONAL)



Some applications may require multiple runs of Hyperion Hy-Lite. In cases like this use the jumper connector to connect two separate runs as shown in picture at left.

(Note: The runs must be within 8 inches of each other as the jumper connectors are only 8 inches in length.)

4.A) Attach the power connector to longer Hyperion Hy-Lite strip and secure with connector holder. Then attach (1) end of the jumper connector to the longer strip and secure with connector holder and plug in removed LED module. Avoid tight areas or severe bending or stretching of the jumper.

4.B) Attach the other end of jumper to the smaller (separate) Hyperion Hy-Lite strip located nearby and secure with connector holder. Plug in removed LED module.

4.C) Secure all wires with self adhesive clamp. (See figure 2)

(Note: Each jumper connector equals 1 ft of LED strip and must be factored into the footage for the power supply. Important: Please see figure 2 for important jumper connector notes.)

STEP 5 LOW VOLTAGE WIRING USING HRL-06-PFC-96 Power Unit

5.A) The HRL-06-PFC-96 is an 8VAC power unit, HYPERION R-Lite is an AC driven system.

5.B) The power supply should be placed within 25 feet of the Hyperion R-Lite Strip. Should you be required to locate the power supply further away please consult with LUMIFICIENT.

5.C) Place the power unit between two selected load groups For optimal power distribution divide the load evenly between terminals 1 and 2. Minimum load per terminal is 10 linear ft. (Maximum load is 35 linear feet when power supply is located within 25ft of runs.) Run a pair of 10 or 12 AWG Class 2 rated power wires from the power unit to the ends of the selected groups. 12 AWG Class 2 wires can be purchased from Lumificient Technologies in 50 foot spools.

(Note: Using higher than 12AWG wire will result in increased voltage drop.)

(Note: All secondary wiring must comply with Article 725 of the 2002 National Electrical Code (NEC). Class 3 PLTC wire can be used as a substitution of Class 2 wire. Please refer to NEC 725.61 "Cable Substitution Hierarchy.")

5.D) Connect power connector leads to power wires (parallel electrical connection) by using "tap and run" IDC connectors.

(Note: Do not use wire nuts for connecting power connectors to wires)

5.E) Use wire nuts ONLY to insulate end of the power wires.

5.F) Secure power wires on the wall with wire clamps

(Note: All free hanging wires must closely follow the building structure and must be supported by wire clamps every 4.5 ft. and at least 1ft from the power unit.)

5.G) Connect class 2 power wires to power unit terminal 1 and 2.

(Note: For better power distribution divide load between terminal 1 and 2.)

(Important: Minimum load per terminal is 10 linear feet, maximum load 35 linear feet.)