



GRAFIK Eye® Power Interfaces

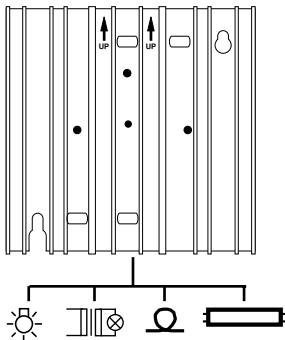
Power Booster (PB)

Electronic Low Voltage Interface (ELVI)

Fluorescent Dimming Ballast Interface (FDBI)

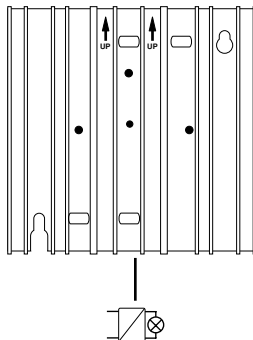
Installation Instructions — Please Read

PB



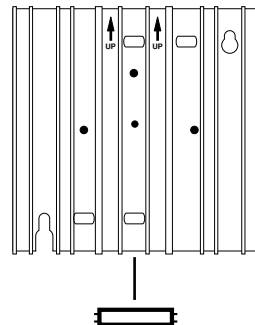
Incandescent
Magnetic Low Voltage
Neon/Cold Cathode
Lutron *Tu-Wire*® Dimming Ballast

ELVI



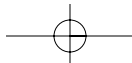
Electronic Low Voltage

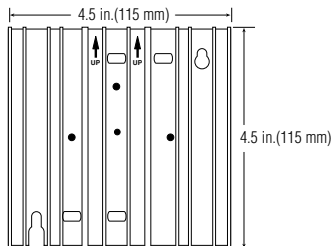
FDBI



Lutron *Hi-lume*® or *Eco-10*™
Fluorescent Dimming Ballast

LUTRON.





Interface shown with faceplate removed

This "load-side" equipment installs on the zone wiring between the Control Unit* and the lighting load.

The **PB** increases a Control Unit's zone load capacity for Incandescent/Halogen (Tungsten), Magnetic Low Voltage, Neon/Cold Cathode, and Lutron *Tu-Wire* load types.

The **ELVI** enables a zone of the Control Unit to control Electronic Low-Voltage loads.

The **FDBI** enables a zone of the Control Unit to control fluorescent loads with Lutron *Hi-lume* or *Eco-10* phase-controlled dimming ballasts.

The maximum load capacity for each Interface is shown in the table that follows.

Unit	120V	220-240V (AU)	230V (CE)
PB	1920W/VA 16A	2400W/VA 10A	1840W/VA† 8A†
ELVI	1000W/VA 8.3A	1200W/VA 5A	1200W/VA 5.2A
FDBI	1920W/VA 16A	2400W/VA 10A	— —

† 1200W/VA and 5.2A for flush mount (as shown on pg. 6).



Danger! Always turn OFF the circuit breakers/MCB or remove the main fuses from the power line before doing any work. Failure to do so can result in serious personal injury. More than one MCB can power this device.

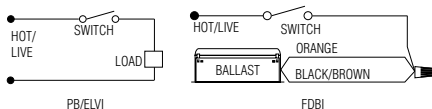
Disconnect all power sources before servicing unit.

1. This Interface must be installed by a qualified electrician in accordance with all applicable regulations.
2. Improper wiring can result in personal injury, damage to the Interface, or damage to other equipment.
3. Up to two **PB/ELVI/FDBIs** per zone.
4. The **PB/ELVI/FDBI** must be mounted with arrows facing upward to ensure adequate cooling.
5. **PB:** If using low-voltage incandescent fixtures, use only with iron core (magnetic) transformers.
6. **ELVI:** Use only with solid-state (electronic) low-voltage transformers that are manufacturer approved to be dimmed by reverse phase control.
7. **CAUTION!** Dimmed magnetic low-voltage transformers: To avoid excessively high current flow that can cause transformer overheating and failure, observe the following:
 - (a) Do not operate the Interface with all of the lamps removed or with any lamps inoperative.
 - (b) Replace any burned out lamps immediately.
 - (c) Use only transformers that incorporate thermal protection or fused primary windings.
8. **ELVI/FDBI:** These Interfaces contain a thermal device that turns Off the Interface if overloaded. The Interface will turn On when it cools.

* See Page 5 for other Lutron products that can be used to control your PB/ELVI/FDBI.

Test load for short circuits

- Turn power Off.
- **PB/ELVI:** Connect standard switch between Hot/Live lead and the load wire to test circuit.
- **FDBI:** Connect standard switch between Hot/Live lead and the Dimmed Hot/Live and switched Hot/Live leads of the ballast.
- Turn power On and check for short or open circuits.



Wiring Instructions

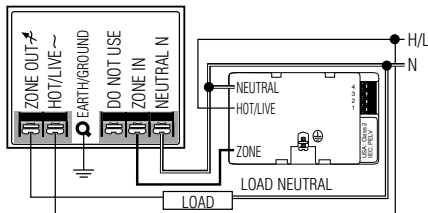
1. Turn power Off to the Control Unit *and* the feed to the **PB, ELVI, or FDBI!**
2. Mount standard U.S. 2-gang wallbox* (available from Lutron, P/N 241-641), 3 1/2 in. (87 mm) deep is strongly recommended, 2 3/4 in. (68 mm) minimum. Allow at least 4 1/2 in. (110 mm) clearance above/below Interfaces to ensure proper heat dissipation.
3. Strip 1/2 in. (12 mm) insulation from all wires in wallbox and wire as shown. All connections are made using #12 AWG (2.5 mm²) wire. Power terminals can accept up to two #12 AWG (2.5 mm²) wires. The NEUTRAL N terminal is for the Control neutral, **not** the load neutral! The recommended installation torque is 9.0 in. • lbs. (1.0 N • m) for line voltage connections.



Single-Feed Wiring for PB/ELVI 120V and 220-240V

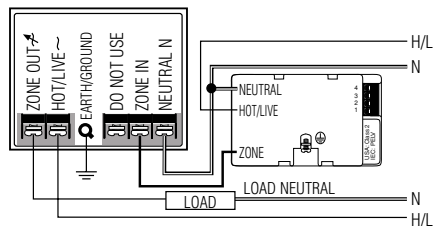


The **PB/ELVI** may be on the same circuit as the Control Unit *only if* the total load does not exceed the rating of the breaker.



Dual-Feed Wiring for PB/ELVI 120V and 220-240V

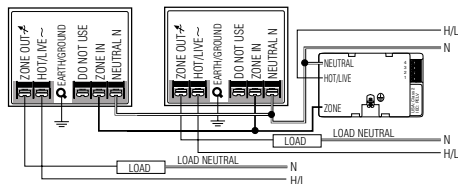
The load breaker/MCB can be on a different phase than the control breaker/MCB.



* Wallbox may be flush mounted or surface mounted. If mounting Interface in a panel, please refer to Panel Mounting section for important information.

Dual-Feed Wiring for Two (2) PB/ELVI Interfaces on One Zone - 120V and 220-240V

The load breaker/MCB can be on a different phase than the control breaker/MCB.



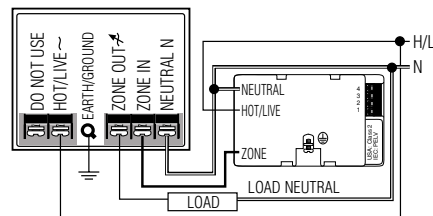
Tu-Wire Dimming Ballast

- When using a **PB** to control a Lutron *Tu-Wire* dimming ballast, the associated zone on the GRAFIK Eye® 3000 Series Control Unit must be set to the *Tu-Wire* load type. Please see the *GRAFIK Eye* 3000 Series Installer's Guide for more details.
- The **PB 230V** must not be used with *Tu-Wire* ballasts because the *Tu-Wire* load type is not available on 230V CE models of the *GRAFIK Eye* Control Unit.

Single-Feed Wiring for PB/ELVI 230V

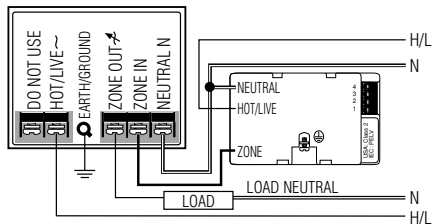


The **PB/ELVI** may be on the same circuit as the Control Unit *only if* the total load does not exceed the rating of the breaker.



Dual-Feed Wiring for PB/ELVI 230V

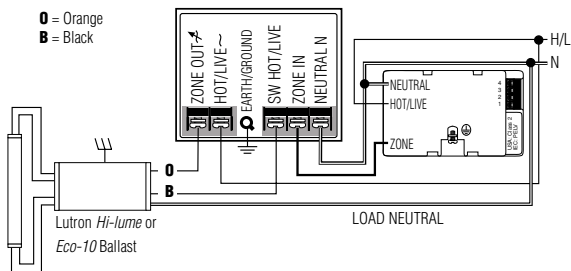
The load breaker/MCB can be on a different phase than the control breaker/MCB.



Single-Feed Wiring for FDBI 120V and 220-240V

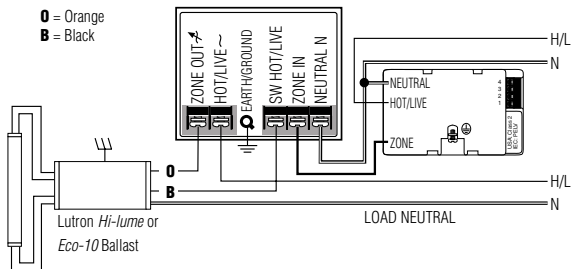


The **FDBI** may be on the same circuit as the Control Unit if, and only if, the total load does not exceed the rating of the breaker. Connect ZONE OUT only to Lutron *Hi-lume* or *Eco-10* Electronic Dimming Ballasts.



Dual-Feed Wiring for FDBI 120V and 220-240V

The load breaker/MCB can be on a different phase than the control breaker/MCB. Connect ZONE OUT only to Lutron *Hi-lume* or *Eco-10* Electronic Dimming Ballasts.



Lutron Products

The following Lutron products can also be used to control your **PB/ELVI/FDBI**:

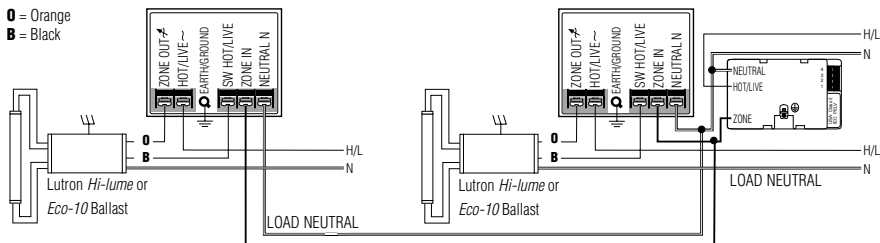
- *GRAFIK Eye* GP Dimming Panels.
- *GRAFIK Eye* LP Dimming Panels.
- Homeworks Interactive™ Remote Power Panels.
- Lutron fluorescent wallbox dimmers.
- Please contact Lutron for use with other *Homeworks Interactive* or *RadioRA*® dimmers.



Dual-Feed Wiring for Two (2) FDBI Interfaces on One Zone 120V and 220-240V

The load breaker/MCB can be on a different phase than the control breaker/MCB. Connect ZONE OUT only to Lutron *Hi-lume* or *Eco-10* Electronic Dimming Ballasts.

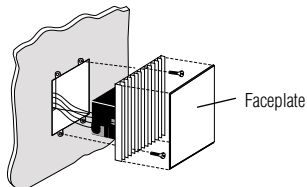
O = Orange
B = Black



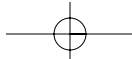
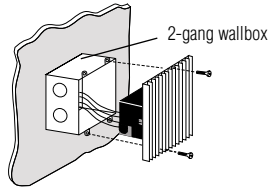
Mounting: Interface must be mounted *vertically*!

1. Confirm all connections and mount the Interface using the screws provided.
2. Restore power to the system.

Flush Mount



Surface Mount

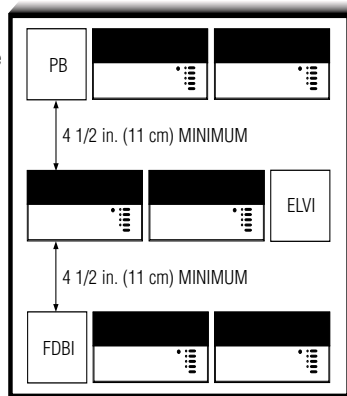


Panel Mounting

- The enclosure must be in accordance with all local and national electrical codes.
- Lutron does not recommend using a door to enclose the front of a panel, since this restricts airflow to the *GRAFIK Eye* Control Units and Interfaces.
- If mounting multiple Control Units or Interfaces in an enclosure:
 1. Ambient temperature within an enclosure **must remain between 32°—104° F (0°—40° C)**.
 2. If not mounting in a metal enclosure, all units **must** be mounted in a wallbox.
- To improve heat dissipation of Power Interfaces, remove the faceplate from the unit.



GRAFIK Eye Control Units and Interface Units dissipate heat when operating. Obstructing these units can cause malfunction to both the Control Unit and the Interface if ambient temperature does not remain between 32°—104° F (0°—40° C).



Troubleshooting Guide

Symptom	Causes	Solution
Lights do not come on.	Power is off	Restore power to the PB/ELVI/FDBI . Restore power to the Control Unit.
	Miswire	Confirm wiring per wiring diagrams.
	Bulb(s)/lamp(s) burned out	Replace bulb(s)/lamp(s).
	<i>GRAFIK Eye</i> 3000 Control Unit	Refer to troubleshooting section of <i>GRAFIK Eye</i> Control Unit Installer's Guide.
	Interface is overloaded	Check for excess load, proper mounting, and adequate air convection. Allow unit to cool.
Lights turn on/off unexpectedly.	Load Type	Confirm that the load type being switched/dimmed is compatible with the PB/ELVI/FDBI .
	<i>GRAFIK Eye</i> 3000 Control Unit	Refer to the troubleshooting section of <i>GRAFIK Eye</i> Control Unit Installation Guide.



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Lutron GL (Singapore)
Tel: 65 220 4666
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LIMITED WARRANTY

Lutron will, at its option, repair or replace any unit that is defective in materials or manufacture within one year after purchase. For warranty service, return unit to place of purchase or mail to Lutron at 7200 Suter Rd., Coopersburg, PA 18036-1299, postage pre-paid.

This warranty is in lieu of all other express warranties, and the implied warranty of merchantability is limited to one year from purchase. This warranty does not cover the cost of installation, removal, or reinstallation, or damage resulting from misuse, abuse, or improper or incorrect repair, or damage from improper wiring or installation. This warranty does not cover incidental or consequential damages. Lutron's liability on any claim for damages arising out of or in connection with the manufacture, sale, installation, delivery, or use of the unit shall never exceed the purchase price of the unit.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This product may be covered by one or more of the following U.S. patents: 4,797,599; 4,803,380; and corresponding foreign patents.

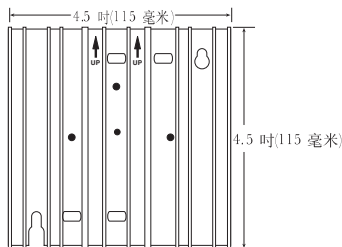
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未帶面板的接口示意圖

此“負載邊”設備安裝在連接主機*和照明負載的燈區接線上。

用電源功率放大器 (PB) 來提高白熾燈/鹵素燈 (碘鎢燈)、電感低壓燈, 霓虹燈/冷陰極燈, 和 Lutron *Tu-Wire* 等類型的燈區負載容量。

用電子低壓燈接口 (ELVI) 來控制有電子低壓燈負載的燈區。

燈區主機通過螢光燈可調光鎮流器接口 (FDBI) 使用路創 (Lutron) *Hi-hmce* 或 *Eco-10* 相位控制的可調光鎮流器來控制螢光燈負載。

各個接口的最大負載容量如下表所示。

主機	120 V	220-240 V (AU)	230 V (CE)
電源功率放大器	1920W/VA 16A	2400W/VA 10A	1840W/VA† 8A†
電子低壓燈接口 (ELVI)	1000W/VA 8.3A	1200W/VA 5A	1200W/VA 5.2A
螢光燈可調光鎮流器接口	1920W/VA 16A	2400W/VA 10A	— —

† 齊平式安裝 (如第 6 頁所示) 為 1200W/VA, 5.2A。

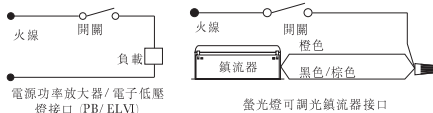


危險! 在做任何工作之前需要切斷全部電路的斷路器/主斷路器 (MCB) 或把主保險絲從電源線上拔下。不這樣做可能會引起嚴重的人身傷害。此裝置可能有一個以上的電源及主斷路器。在進行維修之前請務必切斷所有的電源。

1. 此接口必須由合格的電工按照所有適用條例進行安裝。
 2. 不正確的接線會造成人身傷害, 造成接口或其它設備的損壞。
 3. 每個燈區最多使用兩個 電源功率放大器/電子低壓燈接口/螢光燈可調光鎮流器接口 (PB/ELVI/FDBI)。
 4. 電源功率放大器, 電子低壓燈接口和螢光燈可調光鎮流器接口 (PB/ELVI/FDBI) 必須按箭頭朝上的方向進行安裝, 以保證充足的散熱。
 5. 電源功率放大器 (PB): 如果使用低壓白熾燈設備, 則只能使用鐵心, 磁力/電感變壓器。
 6. 電子低壓燈接口 (ELVI): 只能使用由生產廠商認可的能被反相控制調光的電子低壓變壓器。
 7. 注意! 如在調光電感低壓變壓器時: 為了避免由過高的電流而引起的變壓器過熱和損壞, 請注意下列事項:
 - (a) 切勿在沒有燈泡或有燈泡不亮的情況下操作接口。
 - (b) 立即更換燒毀的燈泡。
 - (c) 只可以使用裝有熱保護器或其初級繞組帶有熔斷保險絲的變壓器。
 8. 電子低壓燈接口/螢光燈可調光鎮流器接口 (ELVI/FDBI): 這些接口裝有在過熱的時候可使接口關斷的熱敏元件。冷卻後接口將會重新啟動。
- * 參考第5頁有關可以用於控制電源功率放大器/電子低壓燈接口/螢光燈可調光鎮流器接口 (PB/ELVI/FDBI) 的其它 Lutron 產品。

檢查負載是否有短路

- 關掉電源。
- 電源功率放大器/電子低壓燈接口 (PB/ELVI) : 在火線和負載之間接入標準開關以檢查電路。
- 螢光燈調光鎮流器接口 (FDBI) : 在其火線和鎮流器的調光火線及鎮流器的開關火線之間接入標準開關。
- 打開電源來檢查是否短路或開路。



接線說明

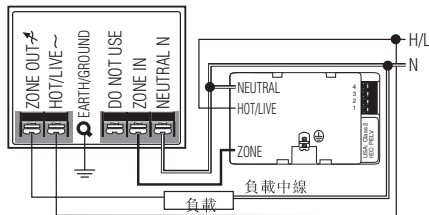
1. 關掉主機電源和送至電源功率放大器 (PB) , 電子低壓燈接口 (ELVI) , 或螢光燈可調光鎮流器接口 (FDBI) 的電源!
2. 安裝標準的美國雙位底箱 * (可由 Lutron 提供, P/N 241-641), 特別推薦使用深度為 3 1/2 吋 (87 毫米) 的底箱, 至少要用 2 3/4 吋 (68 毫米) 的底箱。在各個接口的上下至少要留有 4 1/2 吋 (110 毫米) 的間隔以保證適當的散熱。
3. 將底箱內所有導(電感)線和所示導線剝去 1/2 吋 (12 毫米) 的絕緣層。所有連線均使用 12 號 AWG (2.5 毫米²) 的導線。電源接線端子最多可接受兩根 12 號 AWG (2.5 毫米²) 的導線。中線端 N (Neutral N) 是主機中線, 不是負載中線關於線壓連接, 推薦使用的安裝扭矩為 9.0 吋•磅 (1.0 牛頓•米)。



電源功率放大器/電子低壓燈接口的單路送電接線 120V 和 220-240V

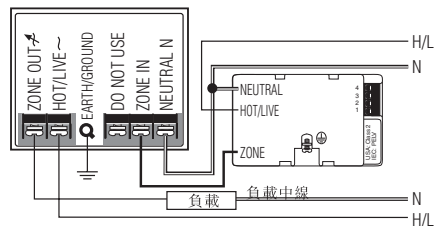


只有當總負載不超過斷路器的額定值時, 電源功率放大器/電子低壓燈接口才可以和主機處在同一電路之中。



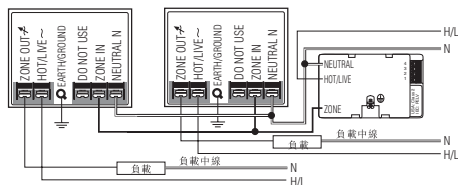
電源功率放大器/電子低壓燈接口的雙路送電接線 120V 和 220-240V

負載斷路器/主斷路器 (MCB) 可以處於與主機斷路器不同的相位。



* 底箱可以是齊平式安裝或外凸式安裝。如果將接口安裝在一個電櫃內, 請參看“安裝電櫃”中重要的安裝資料。

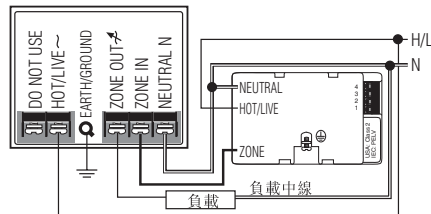
一個燈區上兩 (2) 個電源功率放大器/電子低壓 燈接口的雙路送電接線 - 120V 和 220-240V 負載斷路器/主斷路器 (MCB) 可以處於與主機斷路器不同的相位。



電源功率放大器/電子低壓燈接口的單路送電接線 230V



只有當總負載不超過斷路器的額定值時，電源功率放大器/電子低壓燈接口才可以和主機處在同一電路之中。

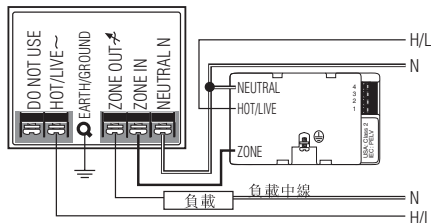


Tu-Wire可調光鎮流器

- 使用電源功率放大器 (PB) 控制 Lutron Tu-Wire 可調光鎮流器時，必須將創藝眼 (GRAFIK Eye®) 3000 系列主機上的相關燈區設定在 Tu-Wire 負載類型。詳細資料請參見創藝眼 (GRAFIK Eye) 3000 系列的安裝指南。
- 230V 的電源功率放大器 (PB) 不得與 Tu-Wire 鎮流器一起使用，因為 230V CE 型號的創藝眼 (GRAFIK Eye) 主機沒有 Tu-Wire 負載類型。

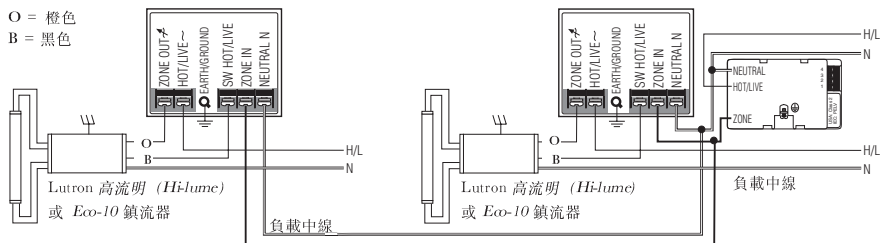
電源功率放大器/電子低壓燈接口的雙路送電接線 230V

負載斷路器/主斷路器 (MCB) 可以處於與主機斷路器不同的相位。



一個燈區上兩 (2) 個螢光燈可調光鎮流器接口的 雙路送電接線
120V 和 220-240V

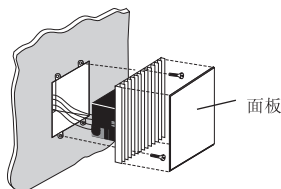
負載斷路器/主斷路器(MCB)可以處於與主機斷路器/主斷路器(MCB)不同的相位。只能將燈區輸出
(ZONE OUT) 連接到路創 (Lutron) 高流明 (Hi-lume) 或 Eco-10 可調光電子鎮流器上。



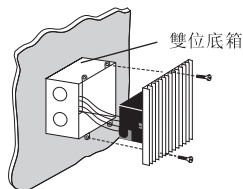
安裝：必須垂直安裝接口！

1. 檢查確認全部連線正確並且用所提供的螺釘安裝接口。
2. 恢復系統供電。

齊平式安裝



外凸式安裝

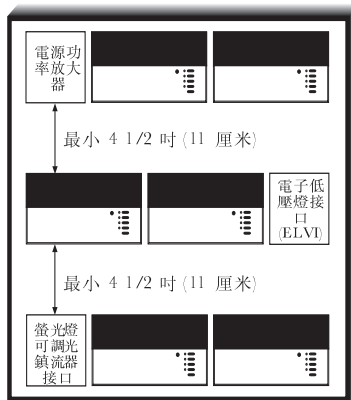


安裝電櫃

- 外封擋必須符合當地的或國家的全部電工條例。
- Lutron 公司不建議使用一扇門來封擋電櫃，因為這樣會限制創藝眼 (GRAFIK Eye) 主機和接口的空氣流通。
- 如果在一個封擋電櫃內安裝多台主機或接口的話：
 1. 封擋電櫃內的環境溫度必須保持在華氏 32 – 104 度 (攝氏 0 – 40 度) 之間。
 2. 如果不是安裝在一個金屬封擋電櫃內，所有的設備就必須安裝在一個底箱內。
- 為了改善電源接口的散熱情況，將面板從設備上卸下。



創藝眼 (GRAFIK Eye) 主機和接口設備在運行時要散熱。如果這些設備的散熱受阻，環境溫度不能保持在華氏 32–104 度 (攝氏 0–40 度) 之間的話，可能會引起主機和接口出現故障。



故障診斷與排除指南

故障癥狀	原因	解決辦法
燈光不能點亮。	電源斷開	恢復電源功率放大器/電子低壓燈接口/螢光燈可調光鎮流器接口的供電。 恢復主機的供電。
	錯誤接線	根據接線圖檢查確認接線正確無誤。
	燈泡/燈管燒壞	更換燈泡/燈管。
	創藝眼 (GRAFIK Eye) 3000 主機	參見創藝眼 (GRAFIK Eye) 主機安裝指南的故障診斷與排除一節。
	接口超負載	檢查超載情況，安裝是否正確，以及空氣對流情況。讓設備冷卻下來。
燈光不正常開啟/關閉。	負載類型	檢查確認所開關或調光的負載類型與電源功率放大器/電子低壓接口/螢光燈可調光鎮流器接口相匹配的。
	創藝眼 (GRAFIK Eye) 3000 主機	參見創藝眼 (GRAFIK Eye) 主機安裝指南的故障診斷與排除一節。

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美國製造和印製

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