

# Signal Tower

## INSTALLATION MANUAL


[ Model : LHE ]

Thank you for specifying the PATLITE Signal Tower for your application.  
Please read these instructions carefully before you perform installation, maintenance and repair.  
Store this manual carefully for easy reference.  
If you have any questions about this product, please contact PATLITE Corporation.


### NOTES TO BE OBSERVED FOR SAFE OPERATION

Note to be followed to prevent any damage to the user and other personnel or to assets are as follows:

■ The indications for warning are divided into the following classes according to the degree of danger or damage incurred when the warning is not taken into consideration and the product is not correctly used.


**Warning**

This symbol marks important instructions that, if ignored or incorrectly followed, could conceivably lead to death or serious injury.


**Caution**

This symbol marks important instructions that, if ignored or incorrectly followed, could conceivably lead to injury or property damage.

### 1. TO OPERATE THIS PRODUCT SAFELY, OBSERVE THE FOLLOWING

**Warning**

- Make sure the power is OFF before wiring. Wrong wiring may result in a cause of short circuit or electric shock.
- Make sure the power is OFF to avoid an electric shock or burn when repair or replace the parts.
- Do not use this product with damaged lens or leave it without the lens or head cover. That may cause an electric shock.
- If installing this product requires a construction work, please ask to a specialist. There is a risk of an electric shock, fire or fall.
- When this product is used for security purposes, it should be inspected daily. In case a malfunction should occur, it is recommended that you use this product together with other security products.
- Be careful not to climb by holding this product after attaching it to any machines. Also be careful not to catch the cover of machine on this product when you remove the cover, as it may cause of falling down or drop.

**Caution**

- Concerning replacement parts, such as LED unit, bulb or fuse, be sure to use those specified in this manual.
- For safety, make sure to connect an external fuse to the power source as shown in the wiring example.
- Do not substitute parts of units from other products. It can cause a breakdown.

### 2. Model No. configuration

LHE-□□□A□□

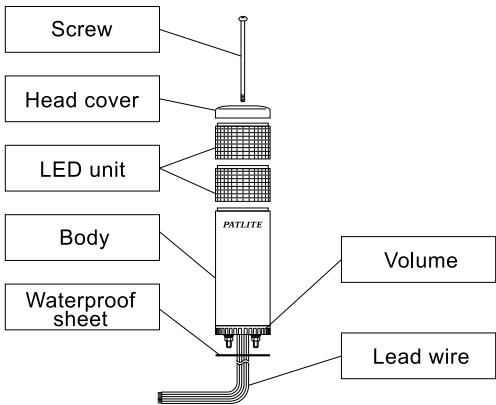
■ Light style  
1~5 Light style

■ Rated voltage  
02 : 24V AC/DC  
10 : 100V AC  
12 : 120V AC  
20 : 220V AC  
23 : 230~240V AC

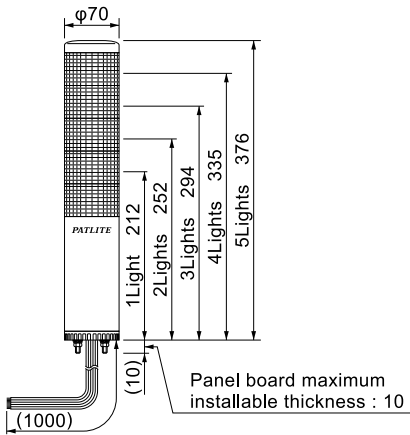
■ Light method  
FB : Continuous light or flashing, with Buzzer  
Nothing : Continuous light

### 3. Parts name and dimensions

■ Parts name



■ Dimensions



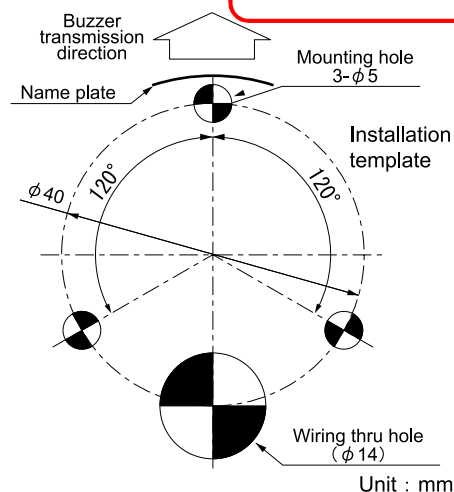
## 4. Installation

### ■ Mounting

- Drill mounting holes in the wall. (See the following installation diagram.)
- Secure the mounting bracket with the hex bolts and hex nuts.
- Install the Signal Tower vertically at a location that has sufficient strength and minimal vibration.
- With buzzer models, the alarm can be heard best from the front direction. Therefore make sure the Signal Tower is facing the correct direction before install it.

### Caution

- This product(UL type) can be used only indoors. (Do not use it outdoors.)
- Do not install the Signal Tower sideways or inverted.
- Make sure of the specified operating voltage and current before use.
- Do not leave the product or use it without LED unit installed.
- Use the soft cloth with moisture when the LED unit or bodies must be cleaned up. (Do not use thinner, benzine, gasoline or oil.)
- When you set up, do not twist with the powerful torque, or connector may be damaged.
- During installation, do not remove the waterproof sheet. It may cause a malfunction.
- This product has 1mm thick waterproof packing at the bottom of the pole bracket. However, when complete waterproofing is not provided due to the unevenness of the installation surface, apply waterproof sealant between the unit and the installation surface to maintain waterproof conditions.
- Warranty is not valid for malfunctions that are caused by handling that does not observe the caution instructions, unauthorized modifications or natural calamities. Do not use this product for purposes other than those specified in this manual.
- For use on a flat surface of a Type 1 Enclosure.
- Maximum surrounding air temperature is at 40°C.



### Using this template

1. Confirm the hole position on the product.
  2. Secure the template to the installation surface using adhesive tape.
  3. Mark the installation holes using a nail punch, etc.
  4. Drill the holes in the installation surface.
- ※ Confirm the direction of the name plate and the wiring route before you drill the holes.

## 5. Wiring Procedure

### ■ Wiring procedure

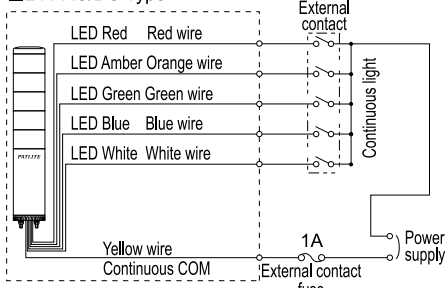
(Concerning the mark ※, the conditions about the product corresponding to UL are mentioned.)

- Please make wiring connection according to wiring example.
- For wiring of 5 layers or less, please make wiring connection by increasing or decreasing external contacts in each layer according to wiring example.
- When using multiple LED units of the same color, make the contact capacity equal to the number of same color LED units multiplied by the contact capacity for 1 light. (This is because LED units of the same color light up for one signal line.)
- ※ Fuse for protection of external contact should be installed within 305mm from the connected point of the power source wire.
- When wiring is completed, insulate the end of each unused lead wire by using insulation tape.
- ※ Use "Class 2 Circuit" for the power supply source and concerning fuse and fuse-holder, be sure to use the products authorized by UL Inc.
- ※ Use the fuse conforming to the rated current of the machine which you install product. (Example : Class J type fuse)
- ※ For the 120V AC and 230-240V AC models, connect the green/yellow lead wire to the ground.
- 100V AC and 220V AC models do not have earth lead wire.
- If you have any questions about simultaneous use of multiple units or other special operations, contact PATLITE Customer Service before wiring.

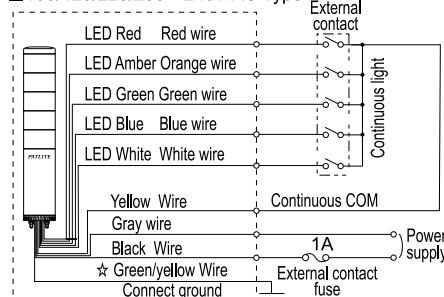
### 1. Wiring example

#### LHE-A Model [Continuous light type]

##### ■ 24V AC/DC Type



##### ■ 100/120/220/230~240V AC Type



☆ 120V, 230~240V only

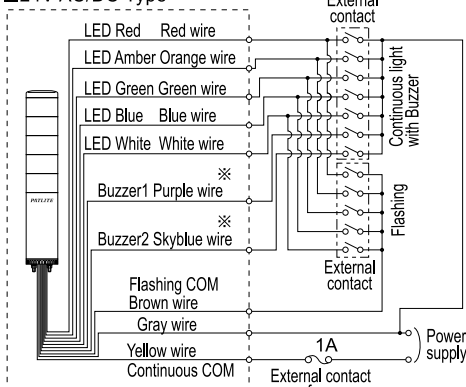
### 【Wire color table】

LED unit color	Wire color
Red Unit	Red Wire
Amber Unit	Orange Wire
Green Unit	Green Wire
Blue Unit	Blue Wire
White Unit	White Wire

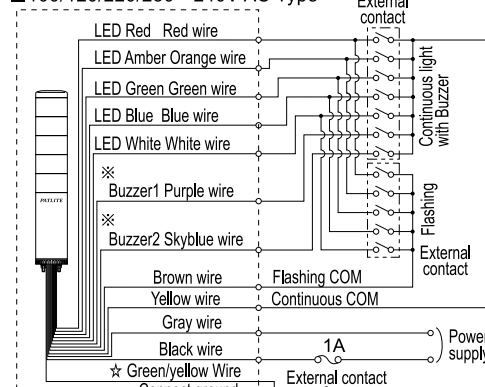
※All 5 wires (Red, Orange, Green, Blue, White) are connected regardless of the number of LED units.

#### LHE-AFB Model [Continuous light or Flashing, with Buzzer type]

##### ■ 24V AC/DC Type



##### ■ 100/120/220/230~240V AC Type



☆ 120V, 230~240V only

Buzzer	Wire color
Nothing	—
Buzzer1: Pi · Pi · Pi	Purple Wire
Buzzer2: Pee · Pee · Pee	Skyblue Wire

※Non buzzer specs. do not have a lead wire for the buzzer.

※When buzzer 1 and 2 are connected to common at the same time, it prioritizes buzzer 1.

### 【External contact fuse】

Voltage	Ampere rating of fuse
All model	250V 1A

※Use the fuse conforming to the rated current of the machine which you install product. (Example : Class J type fuse)

# 【External contact capacity】

Voltage specs.		24V AC/DC	100V AC	120V AC	220V AC	230~240V AC
LED unit [1-Light]	Current consumption	Red • Amber : 50mA    Green • Blue • White : 40mA				
	Contact capacity	$I_s \geq 100\text{mA}$ , $V_s \geq 35\text{V DC}$				
Buzzer	Current consumption	40mA				
	Inrush current	250mA				
	Contact capacity	$I_s \geq 300\text{mA}$ , $V_s \geq 35\text{V DC}$				
Power supply	Current consumption	360mA	100mA	50mA		
	Contact capacity	$I_s \geq 500\text{mA}$ $V_s \geq 35\text{V DC}$	$I_s \geq 150\text{mA}$ $V_s \geq 125\text{V AC}$	$I_s \geq 100\text{mA}$ $V_s \geq 250\text{V AC}$		

※ $I_s$  : Current capacity     $V_s$  : Withstand voltage

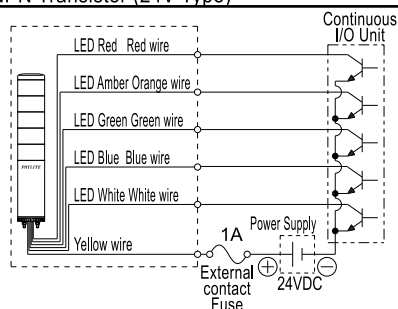
## Caution

- Make sure the power is OFF before wiring. A short circuit may damage internal circuits or cause an electric shock.
- Do not apply voltage directly to signal wires and common wires. It may damage the circuit.  
(100V, 120V, 220V, 230~240V AC)
- Do not pull out the lead wire or push it into the pole or the body.
- Install the external contact fuse on the power supply side as shown in the wiring example in order to prevent burn in case of a wiring error.
- Enough attention shall be paid for wiring because if there is any mistakes in wiring a circuit may break down.
- Do not apply voltage directly to the brown lead wire. It may cause a breakdown. (FB type)
- Simultaneously turning on the external contact for both constant lighting and flashing for the same light (color) may cause another light (color) to light up, to avoid simultaneous input, provide switching between flashing and continuous lighting.
- When you use the plural products simultaneously for flashing or with both two buzzer sounds, please make the external contact independent for each product.
- If you use the product with both two buzzer sounds, please make the external contacts for lighting and for buzzer independent for each product.

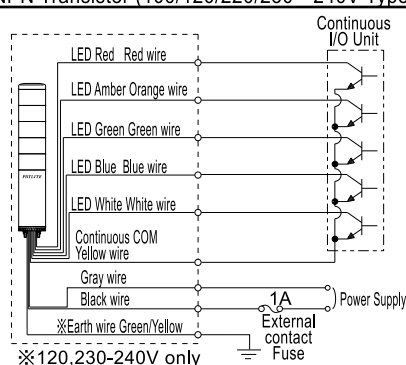
## 2. NPN(PNP)Transistor drive example of 24V DC

### ●Continuous light type

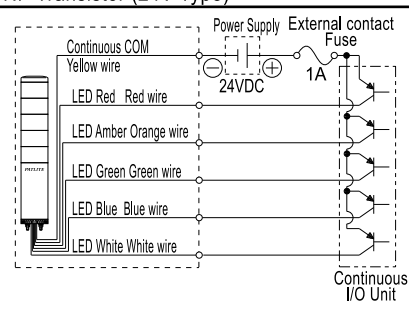
#### NPN Transistor (24V Type)



#### NPN Transistor (100/120/220/230~240V Type)



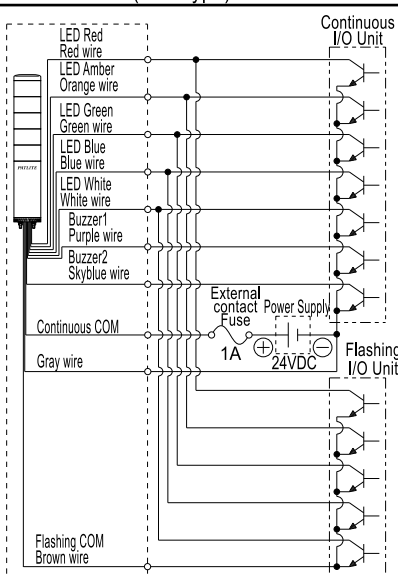
#### PNP Transistor (24V Type)



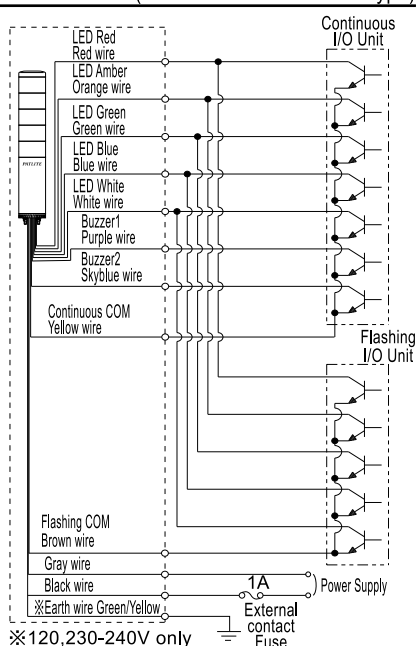
### ●Continuous light or Flashing, with Buzzer type

(When using the FB type, use a separate I/O unit for flashing)

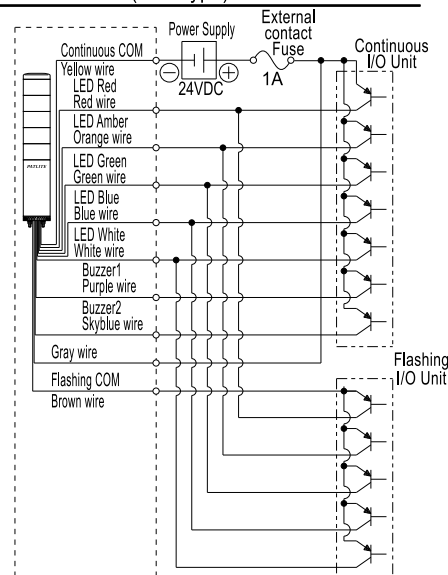
#### NPN Transistor (24V Type)



#### NPN Transistor (100/120/220/230~240V Type)



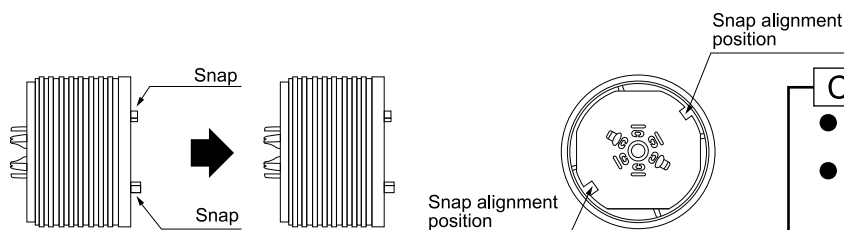
#### PNP Transistor (24V Type)



Model	Transistor (NPN or PNP)
Current capacity	$I_c \geq 100\text{mA}$ (LED unit) $I_c \geq 300\text{mA}$ (Buzzer)
Dielectric break down strength	$V_c \geq 35\text{V}$
Leak current	$I_L \leq 0.1\text{mA}$

## 6. LED unit color reformation

- Turn the power OFF before performing color reformation.
- Unscrew the head cover and remove the lens.
- Each LED unit is secured by 2 small snaps of different sizes to ensure that the module is assembled correctly.
- When increase or decrease the number of lights, install a new center screw for each light. (See 3.Part Names and Dimensions.)

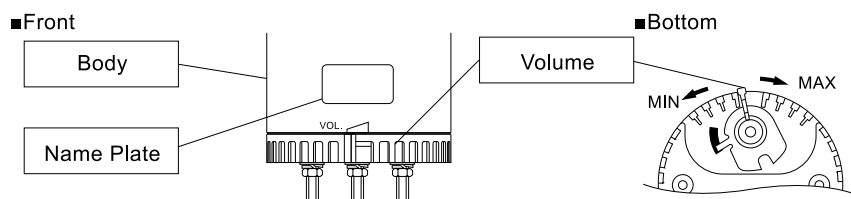


### Caution

- Do not remove a LED unit forcibly. It may damage the unit.
- Loose screw makes LED unit and head cover unstable. Therefore handle the body carefully to avoid dropping or damaging when loose the screws.
- Do not warp or damage the LED unit to a lower unit.
- When the screw of the head cover is tightened too much, it is likely to damage it.  
(The tightening torque is about 0.59N・m.)

## 7. Volume adjustment

- You can adjust the volume by turning the volume control at the bottom to the left or right.
- The volume is at maximum when the volume control is at the front.



### Caution

- Do not turn the volume control forcibly. It might damage the volume control.

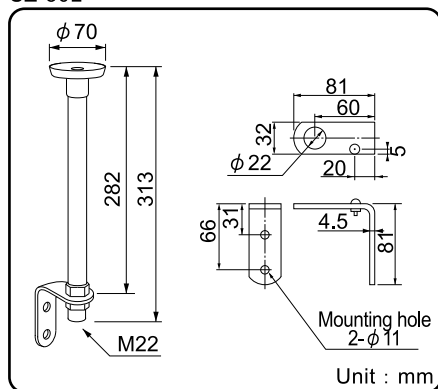
## 8. Specifications

Light style	Model	UL Registration Model	Rated Voltage	Power consumption	Mass	Flashing cycle and Peek sound level	
1 Light	-102A(FB)	LHE- 02A(FB)	24V AC/DC	24V Tpye Red・Amber : 1.2W Green・Blue・White : 1.0W Buzzer : 1.0W  100, 120, 220, 230~240V type Red・Amber : 1.7W Green・Blue・White : 1.5W Buzzer : 1.4W Standing by power consumption : 1.7W	0.4kg	Flashing cycle FB Type 60 flashes per minute	
	-110A(FB)	x	100V AC		0.65kg		
	-112A(FB)	LHE- 12A(FB)	120V AC				
	-120A(FB)	x	220V AC				
	-123A(FB)	LHE- 23A(FB)	230~240V AC				0.45kg
2 Lights	-202A(FB)	LHE- 02A(FB)	24V AC/DC		0.7kg	Sound level 70~90dB/m	
	-210A(FB)	x	100V AC				
	-212A(FB)	LHE- 12A(FB)	120V AC				
	-220A(FB)	x	220V AC				
	-223A(FB)	LHE- 23A(FB)	230~240V AC				
3 Lights	-302A(FB)	LHE- 02A(FB)	24V AC/DC		0.5kg	Power supply wire (100, 220V type) UL1430 / AWG20 (120, 230~240V type) UL1015 / AWG18	
	-310A(FB)	x	100V AC				
	-312A(FB)	LHE- 12A(FB)	120V AC				0.75kg
	-320A(FB)	x	220V AC				
	-323A(FB)	LHE- 23A(FB)	230~240V AC				
4 Lights	-402A(FB)	LHE- 02A(FB)	24V AC/DC		0.55kg		
	-410A(FB)	x	100V AC				
	-412A(FB)	LHE- 12A(FB)	120V AC				
	-420A(FB)	x	220V AC				
	-423A(FB)	LHE- 23A(FB)	230~240V AC				
5 Lights	-502A(FB)	LHE- 02A(FB)	24V AC/DC		0.6kg	Green/Yellow wire (Connect ground) UL1015 / AWG18	
	-510A(FB)	x	100V AC				
	-512A(FB)	LHE- 12A(FB)	120V AC				
	-520A(FB)	x	220V AC				
	-523A(FB)	LHE- 23A(FB)	230~240V AC				

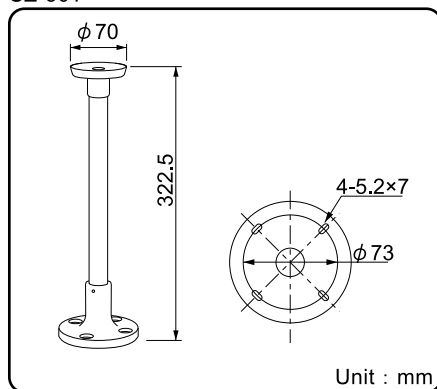
- This product is recognized as a UL standard.  
(24V, 120V, 230~240V type.)  
For recognition as a UL standard;  
- Use on a flat surface with a Type 1 Enclosure.  
- Maximum surrounding air temperature is at 40°C.
- This product conforms to EN standard and shows the CE Marking. (24V type.)  
This product has been tested and found to comply with the limits for a Class A device, pursuant to EMC DIRECTIVE.  
These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.  
This product must not be used in residential areas.

## 10. Optional parts

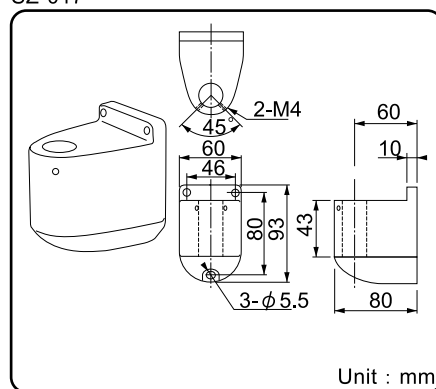
### ■Mounting Pole and bracket SZ-50L



### SZ-50T



### ■Mounting Bracket SZ-017



### Caution

- PATLITE Corporation disclaims all liability for any malfunction or damage occurring as a result of handling contrary to the instructions, cautions and warnings mentioned in this manual.
- Specifications may change without notice due to continual product improvement.

世界中に「安心・安全・楽業」をお届けする

株式会社 パトライト

J2D

<http://www.patlite.co.jp>

〔受付〕 平日9:00～17:00

平日12:00～13:00及び土・日・祝日・  
社休日 は留守番電話による対応

●技術・修理相談窓口 (無料) : 0120-497-090

※ご注文・価格・商品内容等は、各営業所拠点または販売店にお問い合わせください。

## PATLITE Corporation

G2G

**PATLITE Corporation** ※Head office

■<http://www.patlite.com/>

4-1-3, Kyutaromachi, Chuo-ku, Osaka 541-0056 Japan

**PATLITE (U.S.A.) Corporation**

■<http://www.patlite.com/>

**PATLITE Europe GmbH** ※Germany

■<http://www.patlite.eu/>

**PATLITE (SINGAPORE) PTE LTD**

■<http://www.patlite.com/>

**PATLITE (CHINA) Corporation**

■<http://www.patlite.cn/>

**PATLITE KOREA CO., LTD.**

■<http://www.patlite.co.kr/>

**PATLITE TAIWAN CO., LTD.**

■<http://www.patlite.tw/>

**PATLITE (THAILAND) CO., LTD.**

■<http://www.patlite.co.th/>