

Signal Tower INSTALLATION MANUAL

[Type : LCE / LCS]

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

In order to prevent any damage to the user and other personnel or to assets, note the following:

- 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 currently used.

Warning

Indicates an imminently dangerous condition: failure to follow the instructions may lead to death or serious injury.

Caution

Indicates a potentially dangerous condition: failure to follow the instructions may lead to slight injury or property damage.

1. To operate this product safely, please observe the following

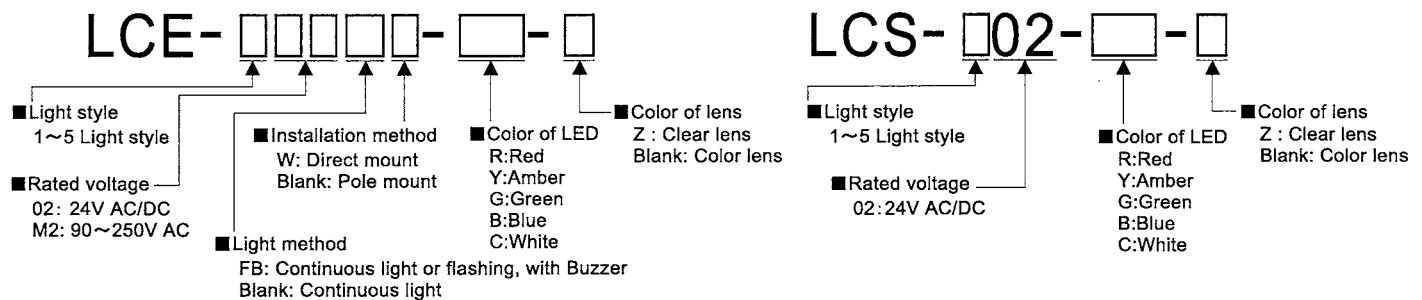
Warning

- Make sure the power is off before wiring, repairing, or replacing parts to avoid a short-circuit, electric shock, or burn.
- Do not use this product with the lens damaged or removed, or without the head cover in order to avoid an electric shock.
- If installing this product requires construction work, please ask a specialist in order to avoid electric shock, fire, or personal injury.
- 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.
- Do not use this product to support your weight while climbing onto a machine. Mount the product so that it is clear of any moving parts - such as a machine cover.

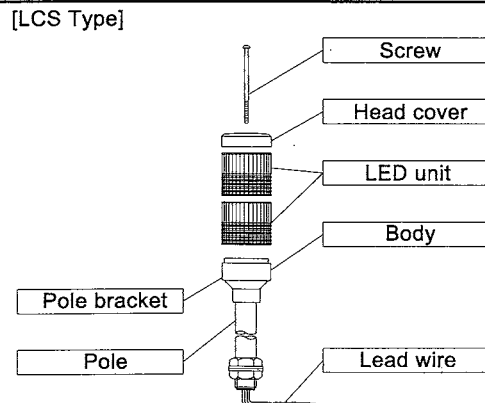
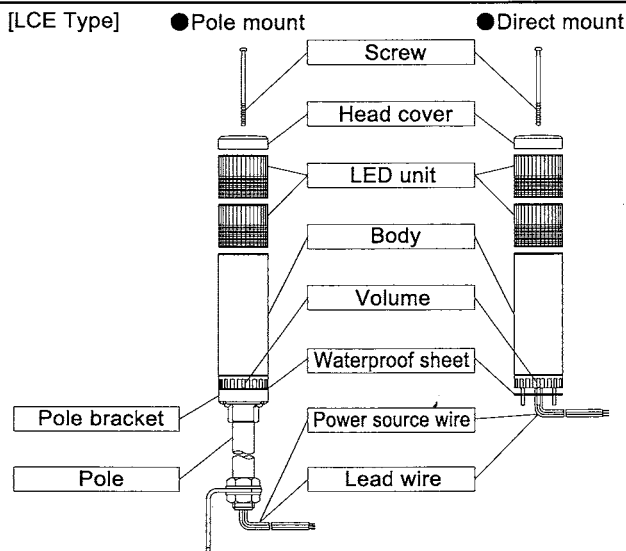
Caution

- 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 as this may cause a breakdown.

2. Model No. Configuration



3. Parts name

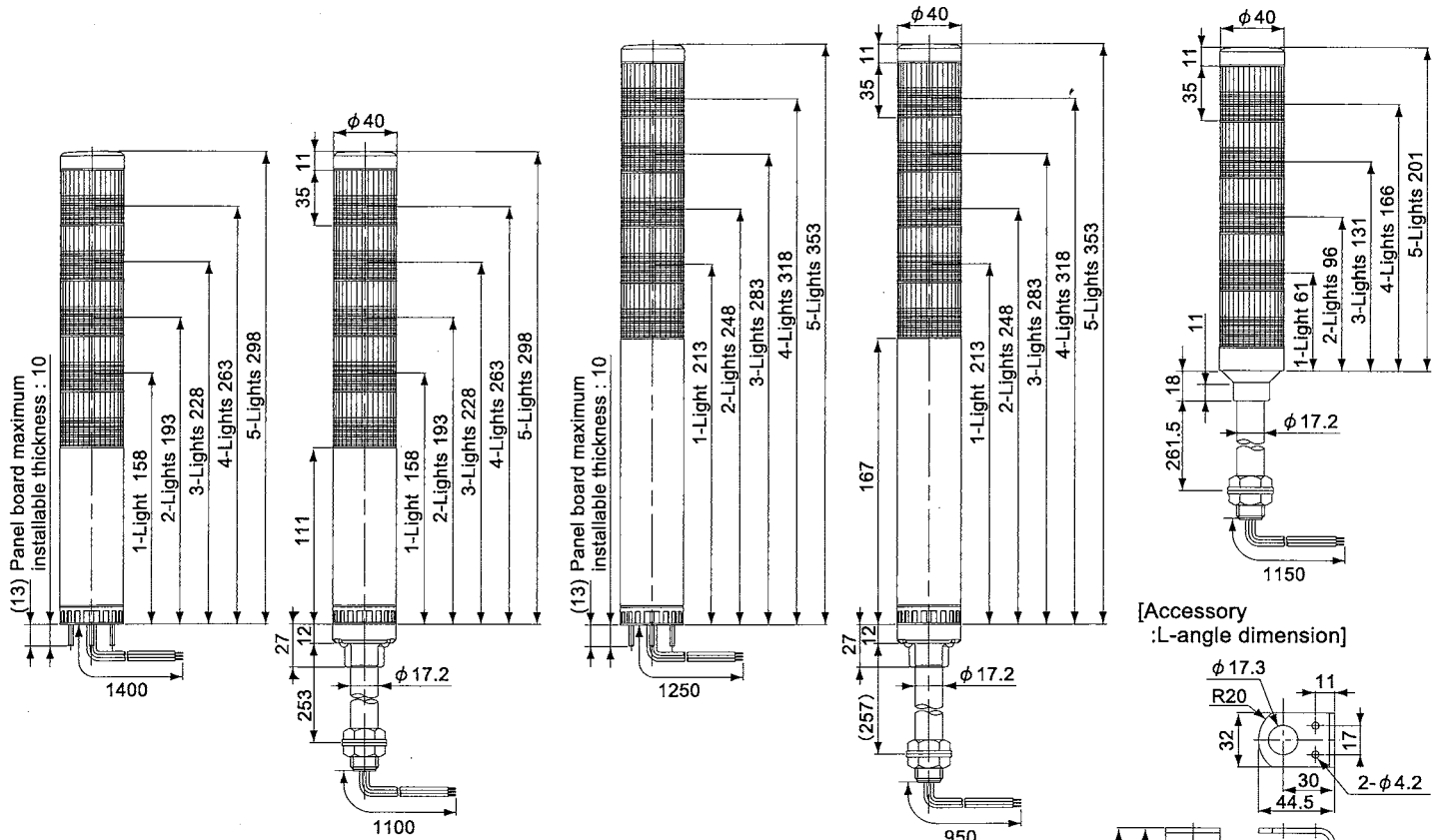


4. Dimension

[LCE-□02FB(W) Type / LCE-□M2(W) Type]

[LCE-□M2FB(W) Type]

[LCS Type]



(Unit : mm)

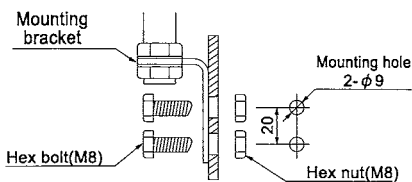
5. Installation

[Mounting]

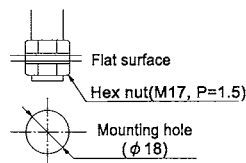
- Drill mounting holes in the wall (pole mount) or panel(direct mount).
- Secure the mounting bracket with the hex bolts and hex nuts.
- Install the Signal Tower vertically at a location that has sufficient strength and minimal vibration.
- With buzzer models, the alarm can be heard best from the front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

[LCE Type / LCS Type]

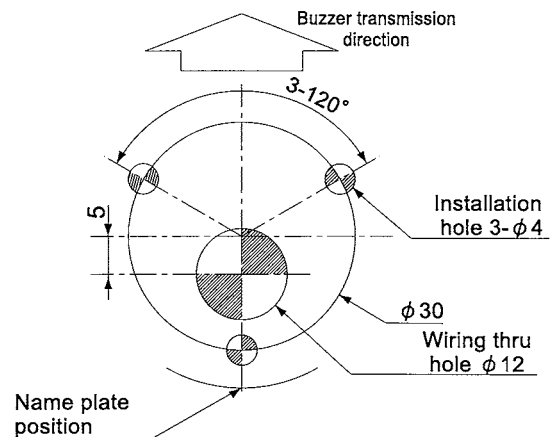
● Side Mounting Installation



● Flat Surface Installation



[LCE-W Type]



Caution

- This product 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 installing this product, do not excessive torque or the product 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.

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.

(Unit : mm)

6. 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 II 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 90-250V AC models, connect the green / yellow lead wire to the ground.
- If you have any questions about simultaneous use of multiple units or other special operations, contact PATLITE Customer Service before wiring.

[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.

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.

[External contact fuse]

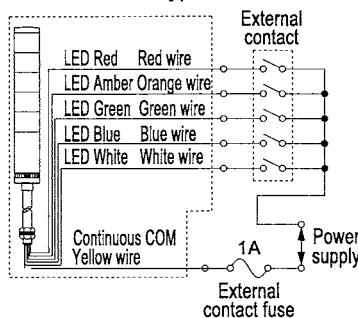
Voltage	Ampere rating of fuse
All model	250V 1A

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

1. Wiring example

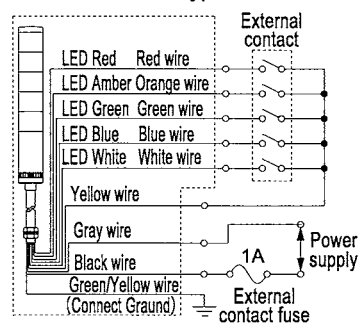
LCE-□02(W) Type / LCS-□02 Type

■24V AC/DC Type



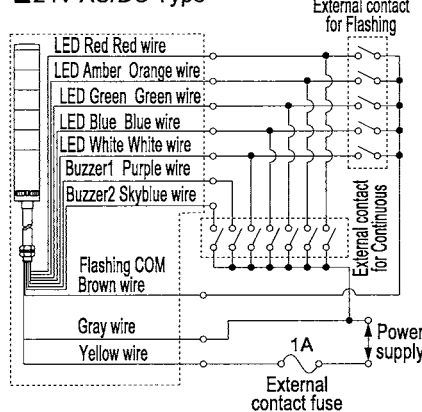
LCE-□M2(W) Type

■90~250V AC Type



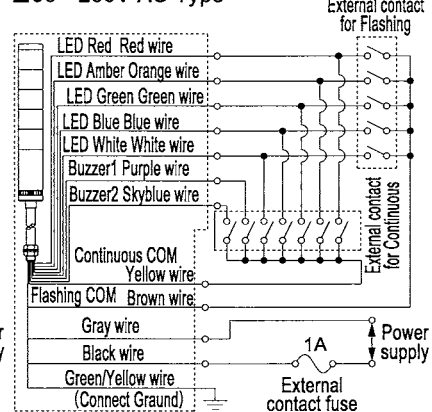
LCE-□02FB(W) Type

■24V AC/DC Type



LCE-□M2FB(W) Type

■90~250V AC Type



[LCE-□02(FB)(W) Type / LCS-□02 Type: External contact capacity]

Voltage specs.		24V AC/DC
LED unit (1 Light)	Current consumption	Red · Amber : 28mA Green · Blue · White : 22mA
	Contact capacity	Is ≥ 100mA Vs ≥ 35V AC
Buzzer	Current consumption	40mA
	Inrush current	250mA
	Contact capacity	Is ≥ 300mA Vs ≥ 35V AC
Power supply	Current consumption	350mA
	Contact capacity	Is ≥ 500mA Vs ≥ 35V AC

※Is : Current capacity Vs : Withstand voltage

[LCE-□M2(FB)(W) Type: External contact capacity]

Voltage specs.		90~250V AC
Power supply	Inrush current	Max:25A 200 μ sec
LED unit (1 Light)	Current consumption	Red · Amber : 28mA Green · Blue · White : 22mA
	Contact capacity	Is ≥ 100mA Vs ≥ 35V AC
Buzzer	Current consumption	4.5mA
	Contact capacity	Is ≥ 10mA Vs ≥ 35V AC
Power supply	Inrush current	100V : 10A 250V : 25A (200 μ sec)
	Contact capacity	Is ≥ 25A

※Is : Current capacity Vs : Withstand voltage

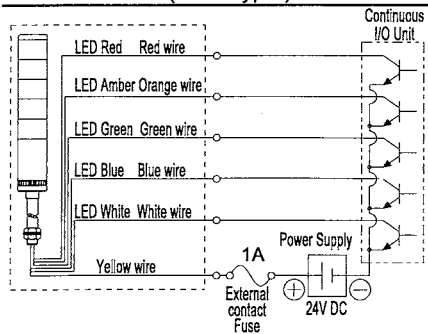
Caution

- Make sure the power is OFF before wiring. A short circuit may damage internal circuits or cause an electric shock.
- Do not 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)
- Do not connect the yellow lead wire and the brown lead wire. It may damage the internal circuit.
- 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 this, provide separate switches for flashing or continuous lighting.
- When turning on the same function, such as flashing or alarms, for more than one product simultaneously, be sure to use separate external contacts for each product and function.
- When using both alarm sounds on one product, use separate contacts for the alarms and the lights.

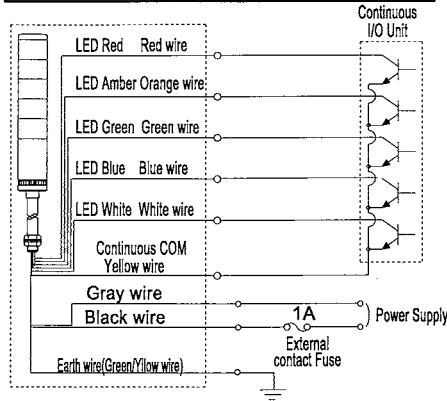
2. NPN(PNP)Transistor drive example

●LCE-(W) Type / LCS Type [Continuous light type]

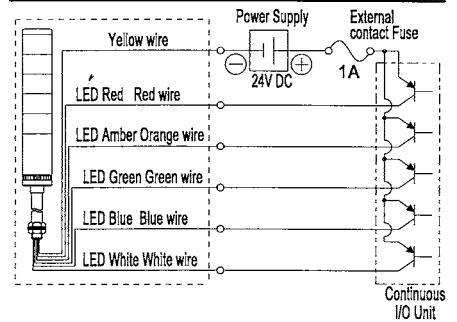
NPN Transistor (24V Type)



NPN Transistor (90~250V Type)



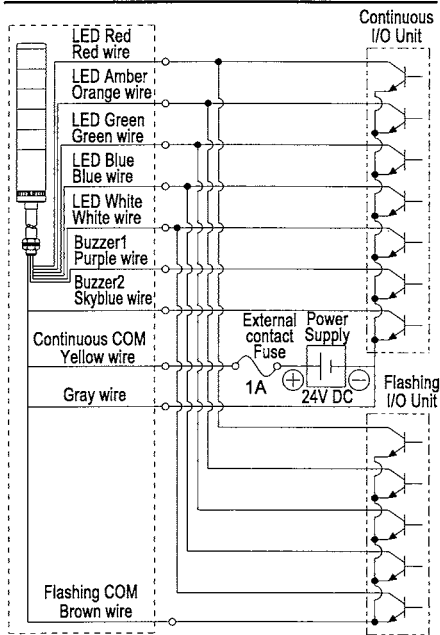
PNP Transistor (24V Type)



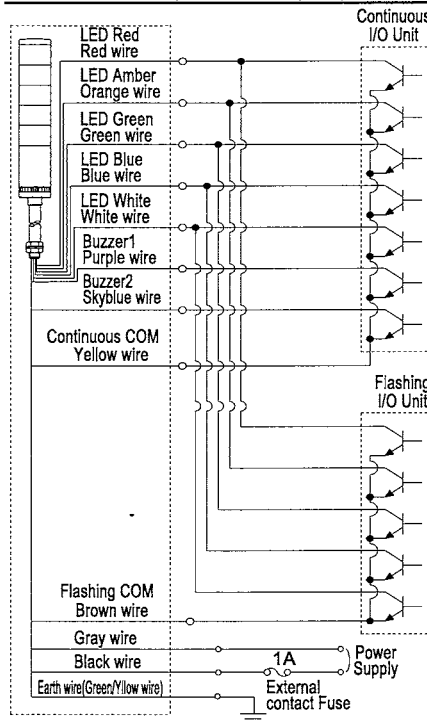
●LCE-FB(W) Type [Continuous light or Flashing, with Buzzer type]

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

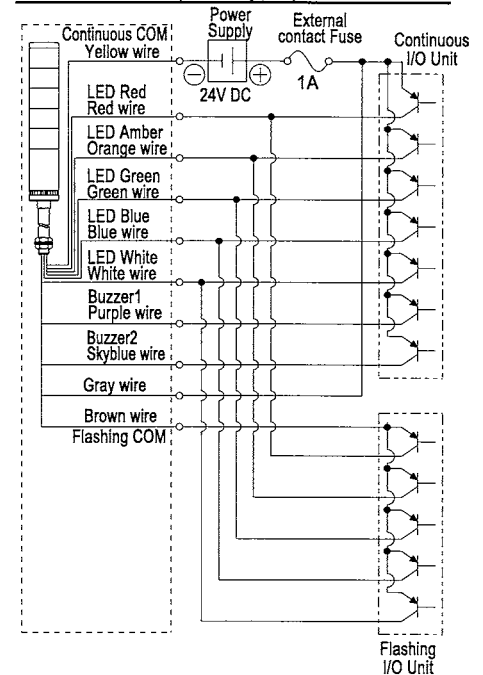
NPN Transistor (24V Type)



NPN Transistor (90~250V Type)



PNP Transistor (24V Type)



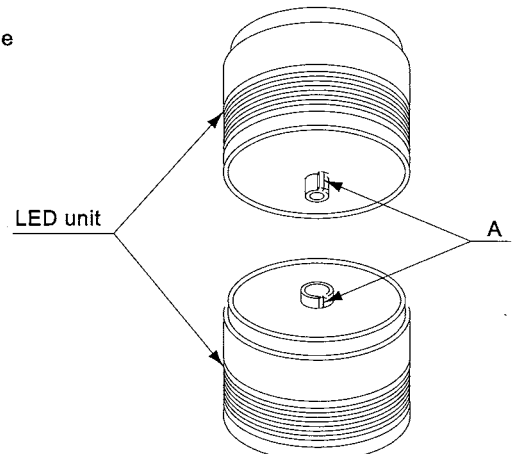
Model	Transistor (NPN or PNP)	Dielectric break down strength	$V_c \geq 35V$
Current capacity	$I_c \geq 100mA$ (LED unit) $I_c \geq 300mA$ (Buzzer)	Leak current	$I_L \leq 1mA$

7. Changing LED unit positions

- Turn the power off before performing this procedure.
- 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 increasing or decreasing the number of modules, install a new center screw (See 3. Part Names.)

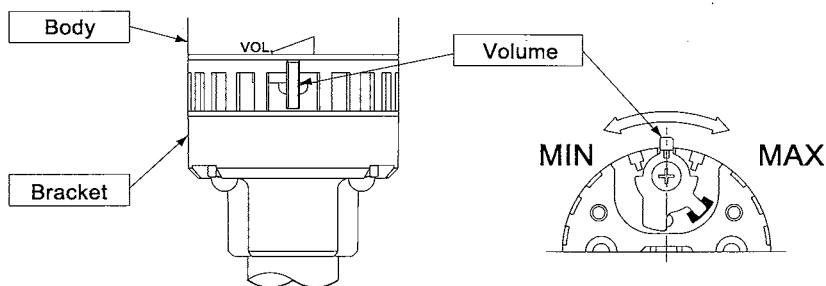
Caution

- Do not remove an LED unit forcibly as it may damage the unit.
- Once the center screw is loose or removed, the LED units are unstable and may separate. Handle carefully to avoid damage.
- Handle the LED units carefully so they are not warped or damaged while changing their positions on the tower.



8. Volume adjustment

- The volume can be adjusted by removing the lever near the bottom of the base to the left or right.
- The volume is at maximum when the volume control is at the front.



Caution

- Do not move the lever forcibly as it may damage the volume control.

9. To use this product in accordance with CE marking, please observe the followings

- Please use a fuse specified by IEC 127.
- When lead wires are exposed outside the body during pole installation, etc. always provide double insulation using insulation tape and vinyl tubing, etc.

10. Specifications

[LCE-□02(FB)(W) Type]

Light style	Model	Rated voltage	UL Standard	Power consumption	Mass※	Flashing cycle and Peak sound level	Wire type/Dia
1Light	-102(T)(FB)(W)	24V AC/DC (50/60Hz)	○	Red Amber :0.7W	0.58kg (0.22)kg	F B Type 60 Flashes per minute Sound level 70~85dB(at1m)	Power source and lead wire UL1007/AWG22
2Lights	-202(T)(FB)(W)		○		0.61kg (0.25)kg		
3Lights	-302(T)(FB)(W)		○	Green Blue White :0.6W	0.64kg (0.28)kg		
4Lights	-402(T)(FB)(W)		○	Buzzer:1.0W	0.67kg (0.31)kg		
5Lights	-502(T)(FB)(W)		○		0.71kg (0.34)kg		

※ () is mass of the direct mount type[W type]

[LCE-□M2(FB)(W) Type]

Light style	Model	Rated voltage	UL Standard	Power consumption	Mass※	Flashing cycle and Peak sound level	Wire type/Dia
1Light	-1M2(W)	90~250V AC (50/60Hz)	○	(240V AC) Red Amber: 0.9W	0.60kg(0.24kg)	F B Type 60 Flashes per minute Sound level 70~85dB(at1m)	Power source wire UL1015/AWG18 Lead wire UL1007/AWG22
	-1M2FB(W)		○		0.65kg(0.29kg)		
2Lights	-2M2(W)		○	Green Blue White: 0.8W	0.63kg(0.27kg)		
	-2M2FB(W)		○		0.68kg(0.32kg)		
3Lights	-3M2(W)		○	Buzzer: 0.9W	0.66kg(0.30kg)		
	-3M2FB(W)		○		0.71kg(0.35kg)		
4Lights	-4M2(W)		○	Standing by power consumption : 1.1W	0.69kg(0.33kg)		
	-4M2FB(W)		○		0.74kg(0.38kg)		
5Lights	-5M2(W)		○		0.72kg(0.36kg)		
	-5M2FB(W)		○		0.77kg(0.41kg)		

※ () is mass of the direct mount type[W type]

[LCS Type]

Light style	Model	Rated voltage	UL Standard	Power consumption	Mass	Wire type/Dia
1Light	-102	24V AC/DC (50/60Hz)	○	Red Amber :0.7W	0.42kg	Lead wire UL1007/AWG22
2Lights	-202		○		0.45kg	
3Lights	-302		○	Green Blue White :0.6W	0.48kg	
4Lights	-402		○		0.51kg	
5Lights	-502		○		0.54kg	

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.