

Cube Tower®

INSTRUCTION MANUAL




[TYPE : KJ(B), KJS(B), KES(B)]

Thank you very much for purchasing our Patlite products.
Prior to installation, read this manual thoroughly before using this product to ensure correct use. In addition, please store this manual for future reference when performing maintenance, repairs or inspections. If there are any questions concerning this product, refer to the contact information at the end of this document and contact your nearest PATLITE Sales Representative.

Safety Precautions

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

- The following symbols classifies the following precautions into two categories and explains the level of harm inflicted when caution is disregarded while using this product.

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

DANGER



caution, risk of fire

- Do not put the flammable material, such as paper or cloth, on the rotating light while it is in operation. It may cause a fire.

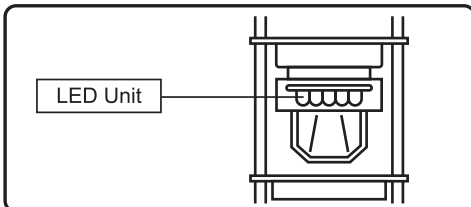
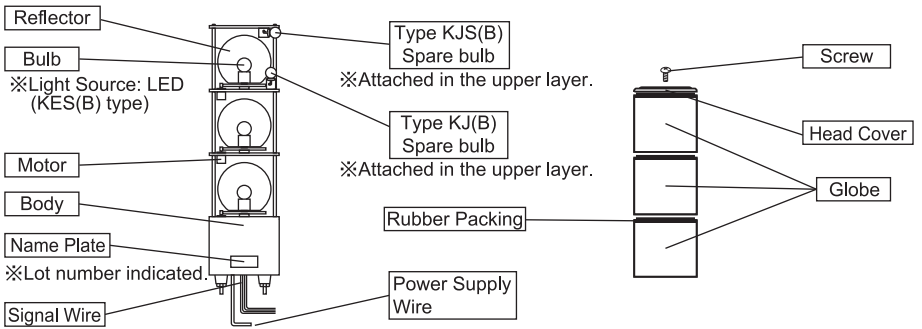
WARNING

- Make sure the power is off before wiring, repairing, or replacing parts to avoid short-circuiting, electric shock, or burns.
- Do not operate this product with the dome removed, cracked dome or loosened dome. Possible burns from the heat of the bulb, injury from the mirror or the product falling may occur.
- Make sure power is turned off and the temperature of the bulb cools down before repair to avoid electric shock or burns.
- Ask a specialist if this product installation requires construction work, 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 this product be used 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.

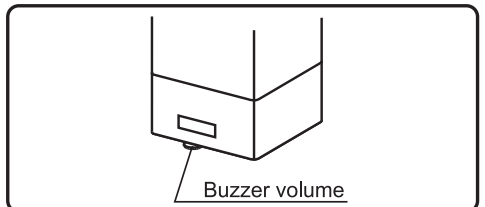
CAUTION

- Ensure the proper working voltage is used and that direct current or alternating current is properly applied.
- Make sure not to use any other bulbs except ones described in specifications.
- Make sure to connect an external fuse to the power source as shown in the wiring example for safety.

2. Part Names

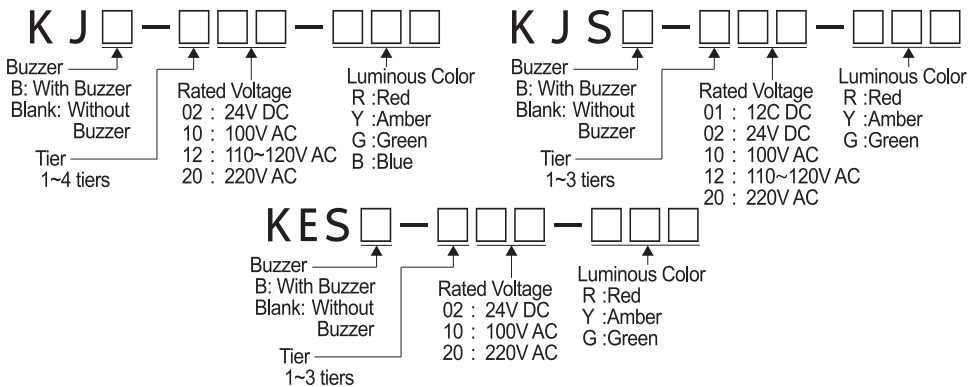


• KES(B) type only



• KJB type only

3. Model Number Configuration



4. Installation

⚠ WARNING

- Request the installation and wiring to be accompanied by a professional contractor. If installation is done improperly, it may result in fire, electric shock, falling, or malfunction.

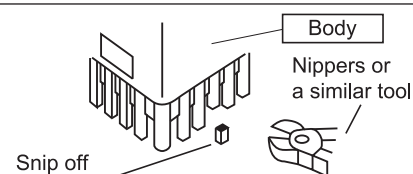
⚠ CAUTION

- When installing the unit in a high place, choose an easily accessible place where it can be maintained. Follow the precautions below to extend the bulb's life from vibration.
 - Do not install directly on vibrating or shock-producing equipment.
 - Do not install on a column or a wall experiencing vibration.
- Install in an upright position. (Do not install this product sideways or inverted.)

■ How to Install

- Drill mounting holes in the installation panel.
- Secure the product with the accessory nuts (supplied).

- For KJS(B) and KES(B) types: If the power and signal wires must be taken out to the side, snip the bottom of the body, as shown in the figure at right, and pull the lead wires through the new access.
- For KJB(B) and KES(B) types: Refer to the mounting template provided for correct location of the holes.



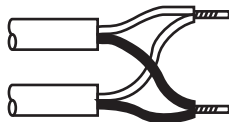
5. Wiring

⚠ WARNING

- Make sure the power is off before wiring, repairing, or replacing parts to avoid short-circuiting, electric shock, or burns.
- Request the installation and wiring to be accompanied by a professional contractor. If installation is done improperly, it may result in fire, electric shock, falling, or malfunction.
- For the 220 AC models, connect the green/yellow lead wire to ground.

⚠ CAUTION

- Ensure the proper working voltage is used and that direct current or alternating current is properly applied.
- Ensure proper wiring has been done to avoid any mistakes in wiring, or circuitry damage may occur.
- While making connections, refer to the wiring example, and be sure to use crimp-type terminal connections.
- Install an external fuse on the power supply side as shown in the wiring example in order to prevent damage in case of a wiring error.
- Do not apply voltage directly to the signal wires. (Except model KJ(B)-□02) It may cause a breakdown.
- Do not pull out the lead wire or push it into the pole or the body.
- Two or more units(100-240V) to be conducted parallel operation, make sure to connect white and black power supply wire as shown below.



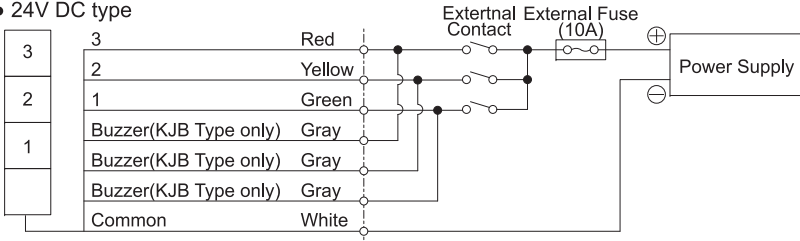
■ How to perform wiring

- Turn the power OFF.
- Make wiring connection according to wiring example.
- The wiring example is for 3 tiers. The number of signal wires will vary for other number of tiers. (Refer to Table "Signal Wire Color".)
- The type with buzzer (KJB, KJSB and KESB Type) is wired to sound the buzzers in conjunction with their respective rotating lights. If the buzzer must sound independently (not in conjunction with the rotating lights), independently wire a switch to the buzzer's signal wire (any one of the gray wires).
- Be sure that the ends of all unused wires are insulated.
- The lamps are numbered 1,2,3,etc., starting with the bottom tier.
- The power wires for 100, 110~120, 220 V AC Type are not polarized + or - .

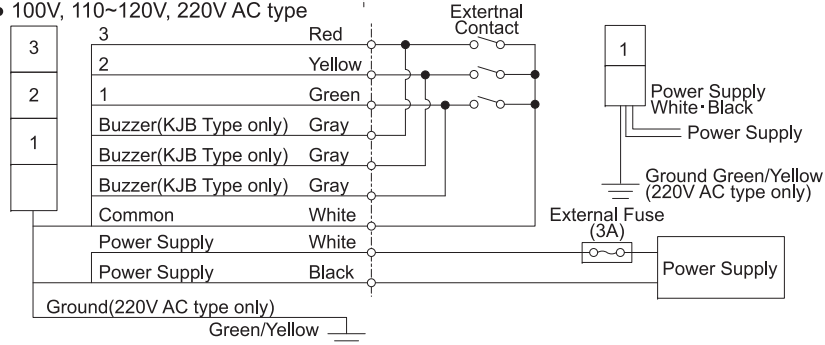
■ Wiring Example

KJ(B) Type

● 24V DC type



● 100V, 110~120V, 220V AC type



● Signal Wire Color

4	—	—	—	Red
3	—	—	Red	Yellow
2	—	Red	Yellow	Green
1	Red	Yellow	Green	Blue
	1 Tier(24V type only)	2 Tiers	3 Tiers	4 Tiers

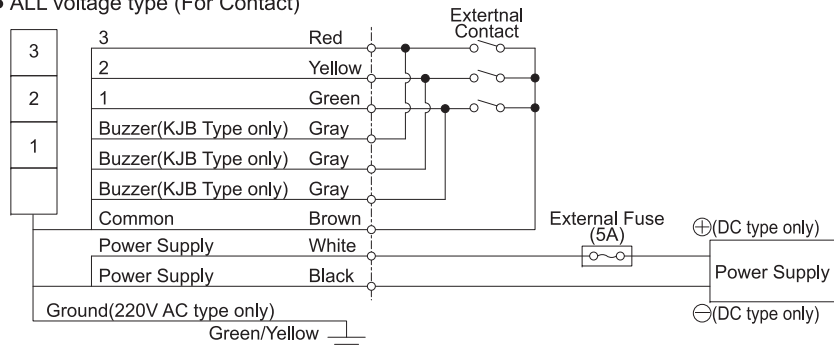
* For the model KJ-110, KJ-112 and KJ-120, the signal wire and common wire are not connected.

● Contact Capacity

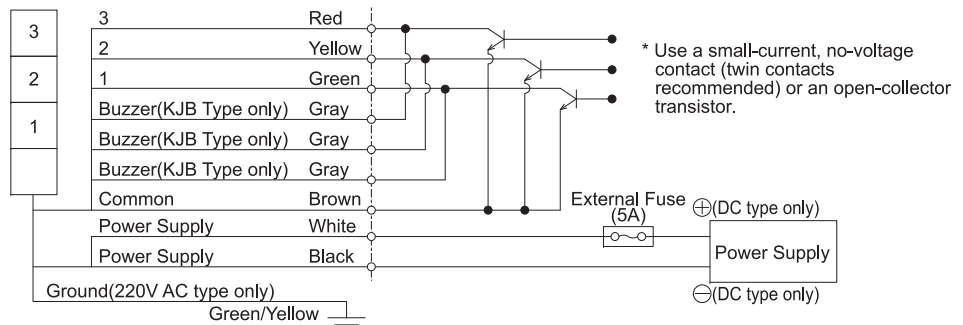
	Current Consumption	Inrush Current	Contact Capacity (Recommended)
For rotating light signal wire	450mA	4.5A	50V,5A
For Buzzer signal wire	30mA	0.3A	50V,1A

KJS(B), KES(B) Type

● ALL voltage type (For Contact)



● ALL voltage type (For NPN Transistor drive)



● Signal Wire Color

3	—	—	Red
2	—	Yellow	Yellow
1	Blue	Blue	Blue
	1 Tier	2 Tiers	3 Tiers

● Contact Capacity

	Contact Capacity (Recommended)
For rotating light signal wire	$V_s \geq 45V, I_s \geq 50mA$
For Buzzer signal wire	$V_s \geq 45V, I_s \geq 300mA$

6. Maintenance

⚠ WARNING

- Make sure power is turned off and the temperature of the bulb cools down before repair to avoid electric shock or burns.

⚠ CAUTION

- Be sure to use the specified replacement bulb indicated in this manual or on the nameplate.
- Use a soft cloth moistened with water to clean the Globe or Body.
(Do not use thinner, benzine, gasoline or oil.)
- Do not grease the motor or rotor, it will cause the motor to stop.
- Do not use hands to rotate the Reflector.
- Depending on the deterioration of the rubber packing for the globe or body, any cracking or breaking hinders the waterproof construction and has to be replaced. Regularly inspect the rubber packing for cracking, breaking, stress, fatigue or any other form of deterioration.

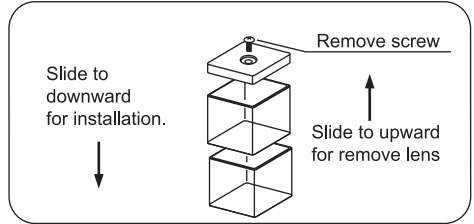
■ Maintenance procedure

1. Changing Globe

Please follow the procedure indicated below to change the globe.

- (1) Make sure power is off before changing globes.
- (2) Loosen head cover screw, then put the globe off.
- (3) Put in the new globe, then installing the head cover.

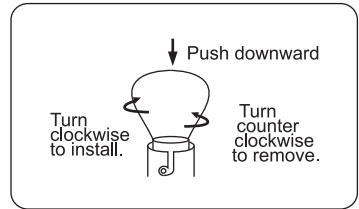
*Be sure to reinstall the rubber packing to the body globe and head cover (one size for all applications).



2. Changing Bulb

Please follow the procedure indicated below to change the bulb.

- (1) Make sure power is off before changing any bulbs.
- (2) Refer to "Changing Globe" to remove the globe.
- (3) Press the bulb down and turn it counter clockwise to detach from the socket.
- (4) Affix a new bulb into the socket by pressing down and clockwise.
- (5) Attach the globe.



■ Replacement Parts

The following are replacement parts available for this product.
Globe, Bulb, Reflector, Motor, Rubber packing

7. Troubleshooting

If a problem occurs, check the following table to remedy the problem before calling for service.

Problems	Where to check	Solution
The reflector would not rotate and the lamp module stays turned off.	Is the power on?	Check the power wiring, plug connection and fuse.
		If a switch is installed, check to see that it is turned on.
The reflector rotates but the lamp is off.	Is the light bulb burned out?	If it is, replace it with a new one.
The lamp module is turned on but the reflector stays stopped.	Is the motor stopped? Is the motor greased?	The motor is broken or has reached the end of its life. Request for repair.

If the problem is not corrected, even after the above remedies have been performed, contact either the place of purchase or your nearest PATLITE Sales Representative.

8. Specifications

■ Specifications

KJ(B) Type

Tiers	Model	Rated Voltage	Rated Current	Flashing Rate	Bulb	Mass
1 Tier	KJ(B)-102	24V DC	0.5A	130 flashes par minute	24V 10W	1.0kg
	KJ(B)-110	100V AC	0.1A		12V 5W	1.2kg
	KJ(B)-112	110~120V AC				
	KJ(B)-120	220V AC	0.05A			
2 Tiers	KJ(B)-202	24V DC	1.0A	130 flashes par minute	24V 10W	1.5kg
	KJ(B)-210	100V AC	0.13A		12V 5W	2.0kg
	KJ(B)-212	110~120V AC				
	KJ(B)-220	220V AC	0.07A			
3 Tiers	KJ(B)-302	24V DC	1.5A	130 flashes par minute	24V 10W	2.0kg
	KJ(B)-310	100V AC	0.18A		12V 5W	2.5kg
	KJ(B)-312	110~120V AC				
	KJ(B)-320	220V AC	0.09A			
4 Tiers	KJ(B)-402	24V DC	2.0A	130 flashes par minute	24V 10W	2.5kg
	KJ(B)-410	100V AC	0.26A		12V 5W	3.0kg
	KJ(B)-412	110~120V AC				
	KJ(B)-420	220V AC	0.13A			

* Bulb type Glass: G18, Base: BA15S (Spare bulb: 1pcs.)

* KJB Type: With Buzzer (The volume can be adjusted by moving the volume near the bottom of body.)

	Wire type / Diameter	Wire length
Power Supply Wire	UL1430 / AWG20 (24V DC type) VCT / 0.75mm ² (100V, 110~120V AC type) VCTF / 0.75mm ² (220V AC type)	Approx. 280mm
Signal Wire, Common Wire	UL1430 / AWG20	Approx. 300mm

KJS(B) Type

Tiers	Model	Rated Voltage	Rated Current	Flashing Rate	Bulb	Mass
1 Tier	KJS(B)-101	12V DC	0.5A	160 fashes par minute	12V 5W	0.5kg
	KJS(B)-102	24V DC			24V 10W	
	KJS(B)-110	100V AC	0.06A		12V 5W	0.7kg
	KJS(B)-112	110~120V AC				
	KJS(B)-120	220V AC	0.03A			
2 Tiers	KJS(B)-201	12V DC	1.0A	160 fashes par minute	12V 5W	0.8kg
	KJS(B)-202	24V DC			24V 10W	
	KJS(B)-210	100V AC	0.1A		12V 5W	1.2kg
	KJS(B)-212	110~120V AC				
	KJS(B)-220	220V AC	0.05A			
3 Tiers	KJS(B)-301	12V DC	1.5A	160 fashes par minute	12V 5W	1.2kg
	KJS(B)-302	24V DC			24V 10W	
	KJS(B)-310	100V AC	0.2A		12V 5W	1.6kg
	KJS(B)-312	110~120V AC				
	KJS(B)-320	220V AC	0.1A			

* Bulb type Glass: G18, Base: BA15S (Spare bulb: 1pcs.)

* KJSB Type: With Buzzer

	Wire type / Diameter	Wire length
Power Supply Wire	UL1007 / AWG20 (24V, 12V DC type) VCTFK / 0.75mm ² (100V AC type) VCTF / 0.75mm ² (220V AC type)	Approx. 280mm
Common Wire	UL1007 / AWG20	Approx. 250mm
Signal Wire	UL1007 / AWG22	

KES(B) Type

Tiers	Model	Rated Voltage	Power Consumption	Flashing Rate	Mass
1 Tier	KES(B)-102	24V DC	KES: 7.0W MAX KESB: 7.5W MAX	110 flashes par minute	0.4kg
	KES(B)-110	100V AC			0.8kg
	KES(B)-120	220V AC			
2 Tiers	KES(B)-202	24V DC	KES: 14.0W MAX KESB: 14.5W MAX	110 flashes par minute	1.0kg
	KES(B)-210	100V AC			1.4kg
	KES(B)-220	220V AC			
3 Tiers	KES(B)-302	24V DC	KES: 21.0W MAX KESB: 21.5W MAX	110 flashes par minute	1.4kg
	KES(B)-310	100V AC			1.8kg
	KES(B)-320	220V AC			

* Power consumption will vary slightly according to color (red, amber and green).

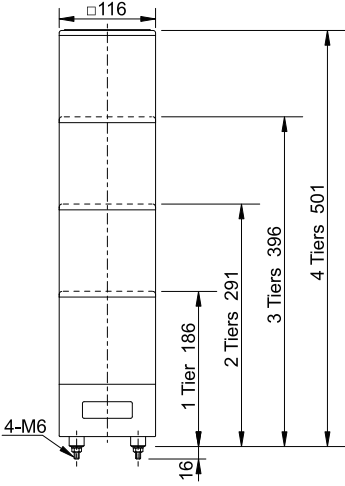
* KESB Type: With Buzzer

	Wire type / Diameter	Wire length
Power Supply Wire	UL1007 / AWG20 (24V DC type) VCTFK / 0.75mm ² (100V AC type) VCTF / 0.75mm ² (220V AC type)	Approx. 280mm
Common Wire	UL1007 / AWG20	Approx. 250mm
Signal Wire	UL1007 / AWG22	

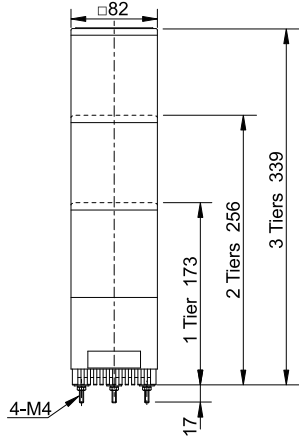
■ Dimensions

(Unit: mm)

KJ(B) Type



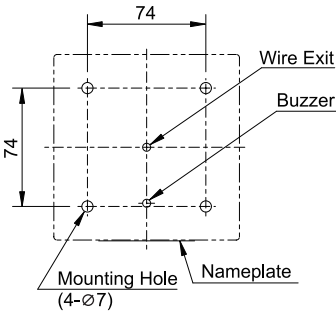
KJS(B), KES(B) Type



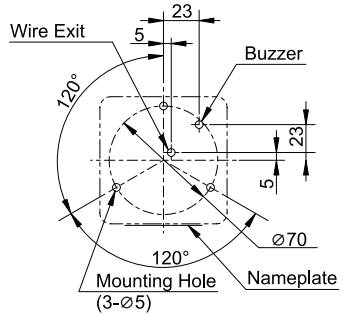
■ Installation Dimensions

(Unit: mm)

KJ(B) Type



KJS(B), KES(B) Type



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.

PATLITE Corporation

G2J

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