

PATLITE



Sanda Plant

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To ensure correct use of these products, read the Instruction Manual prior to use. Failure to follow all safeguards can result in fire, electric shock, or other accidents. Specifications are subject to change without notice.

ISO14001/ISO9001 Certified



PATLITE ECO PROJECT

For the benefit of mankind and the earth, PATLITE is committed to developing environmentally friendly products.

Headquarters/Sanda Plant/Techno Center

PT. PATLITE INDONESIA

PATLITE

New Frontiers in Safety, Security and Comfort.

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PATLITE is Number 1 for Signaling Technology.

Combining innovative LED technology and advanced optical design, PATLITE's signaling products deliver the highest level of illumination and reliability with protection up to IP-65*. Featuring a broad selection of models, sizes, designs and optional accessories, you can find the best solution for specific requirements. PATLITE's quality standard guarantees long-term customer satisfaction in diversified applications.

There is no better choice for signaling products than PATLITE for now and the future.

PATLITE is number one in the world for signaling solutions.

Note: *Some models are not IP 65-rated.

Outstanding Illumination

PATLITE's high-intensity LEDs and innovative lens design ensures outstanding illumination and exceptional brightness from any direction and distance.

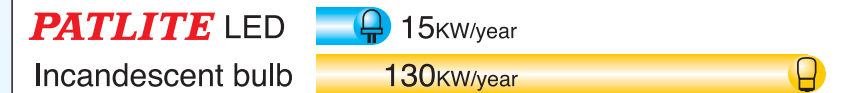


Patented Reflection System

PATLITE's patented reflection system is optimized for full illumination over the entire lens.

Low Power Consumption

PATLITE's high-intensity LEDs are eight times more efficient than conventional incandescent bulbs.



Note: For one LED module and one bulb with continuous operation

Long Service Life and Reliability

PATLITE's high-intensity LEDs guarantees an extended service life of 100,000 hours. That is more than 11 years of continuous operation!



Note: Both with continuous operation

Reduced Maintenance and Labor

PATLITE's high-intensity LEDs drastically reduces costly maintenance requirements for replacing bulbs. The life of PATLITE's high intensity LEDs is over 16 times longer than conventional incandescent bulbs.



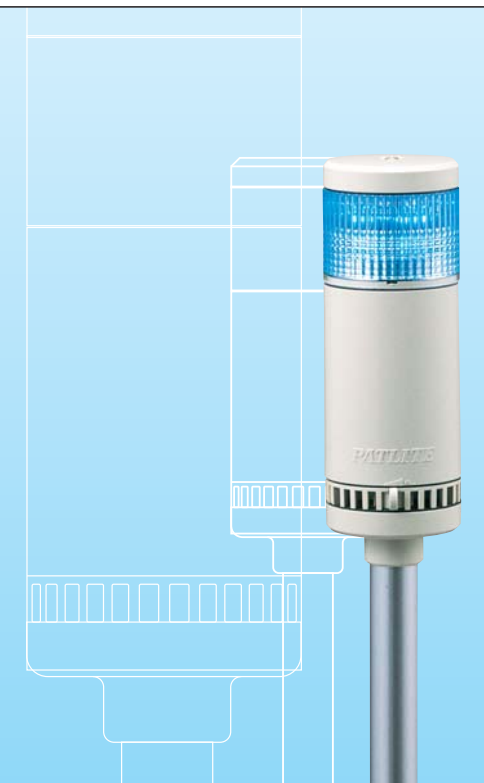
Environmentally Responsible

Many PATLITE products use lead-free technology, and are RoHS compliant. In addition, long-life LEDs reduce waste compared to conventional incandescent bulbs.



Rugged and Robust Design

PATLITE's design with a center shaft in its signal tower ensures the structural integrity of the modules, promising protection against vibration and mishandling. Yet, it offers modularity and flexibility for changing the LED modules. The smooth-finished body surface prevents collection and adhesion of dust, making our products easy to clean. PATLITE's signaling products are constructed using world-class quality materials to withstand harsh production environments.

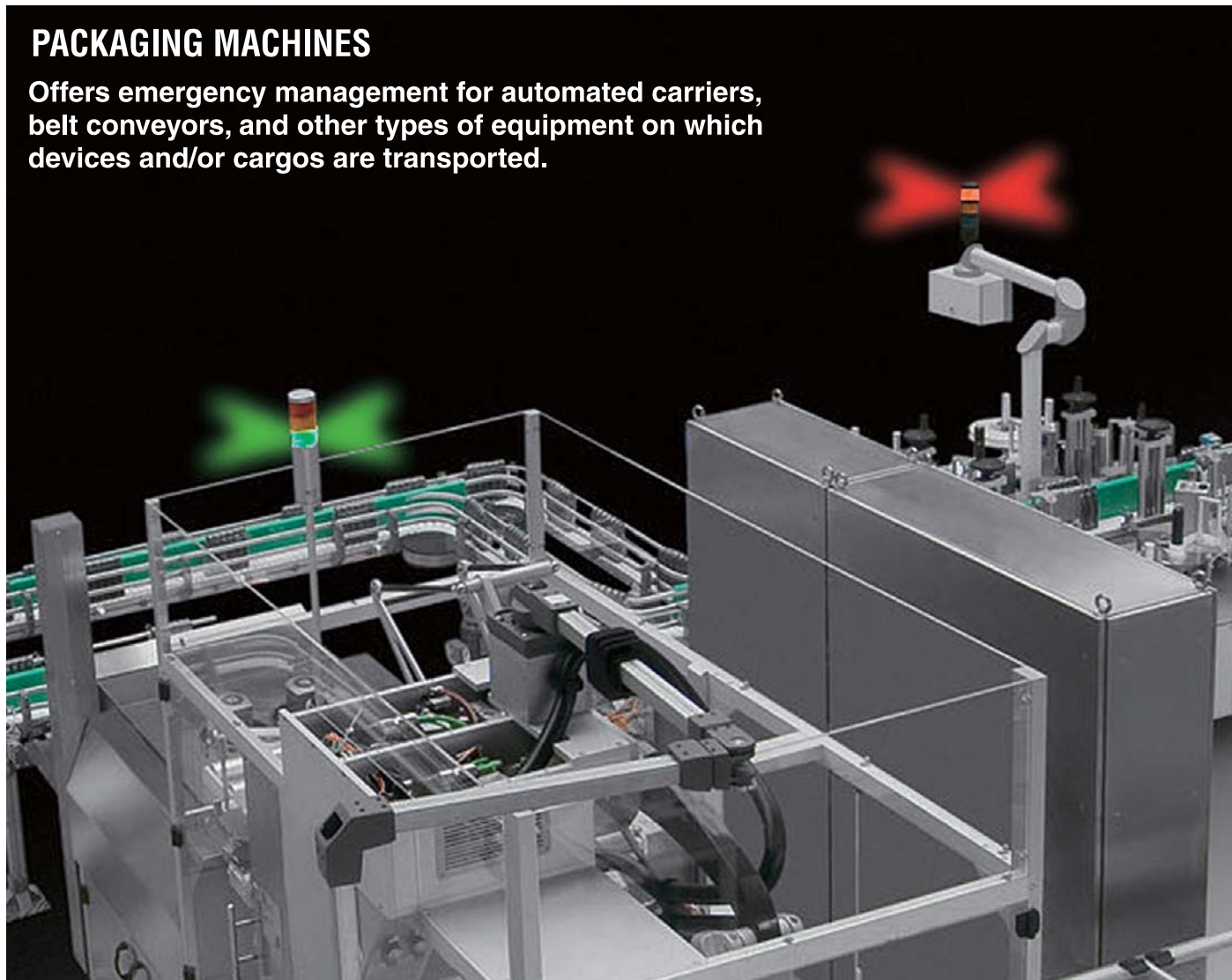


INTRODUCTION TO VISUAL & AUDIBLE SIGNAL APPLICATIONS

Since 1947, PATLITE has been at the forefront in developing and innovating a variety of signaling products. PATLITE's extensive product range covers highly advanced LED signal towers, beacons, audible alarms, annunciators, and work lights for industrial automation and security applications. As a top brand manufacturer, we aspire to become the global standard for signaling products.

PACKAGING MACHINES

Offers emergency management for automated carriers, belt conveyors, and other types of equipment on which devices and/or cargos are transported.

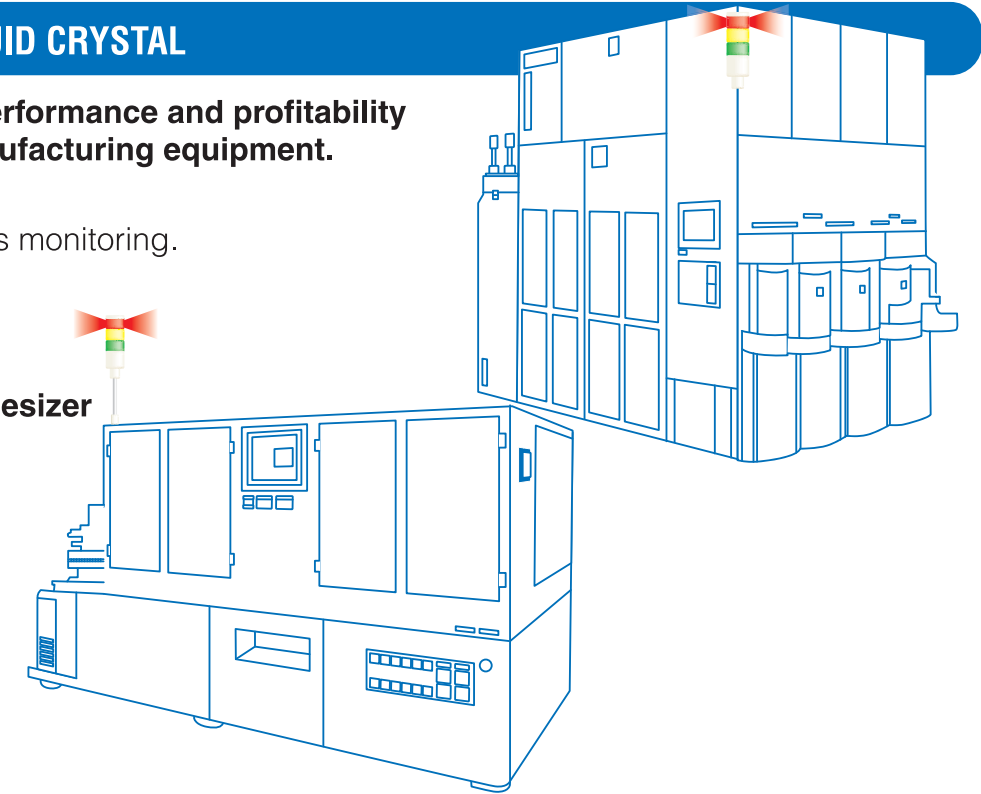


SEMICONDUCTOR / LIQUID CRYSTAL

Achieve high levels of performance and profitability with semiconductor manufacturing equipment.

Real-time machinery status monitoring.

- Signal Tower
- Signal Horn
- Recordable Voice Synthesizer
- Voice Synthesizer

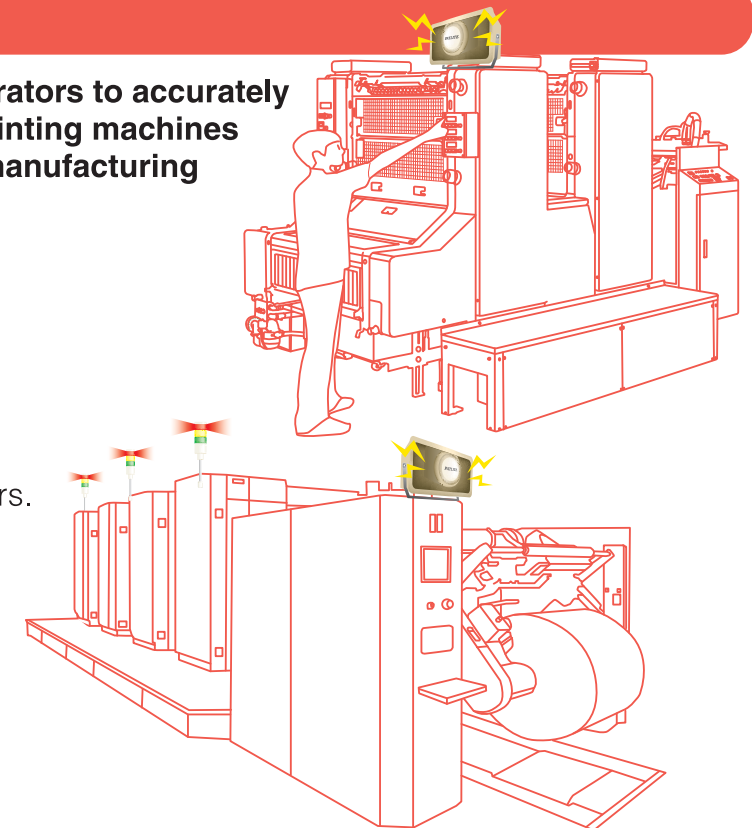


PRINTING

Ensures safe operation by allowing operators to accurately ascertain the operating conditions of printing machines and sounding an alarm in the event of manufacturing losses or machine failure.

Enables operators of printing machines running at a high speed to quickly recognize manufacturing losses and equipment malfunctions by providing them with guidance on resolving paper-feed failures, replenishing ink at suitable times, and other such matters.

- Signal Tower
- Signal Horn
- Recordable Voice Synthesizer
- Voice Synthesizer

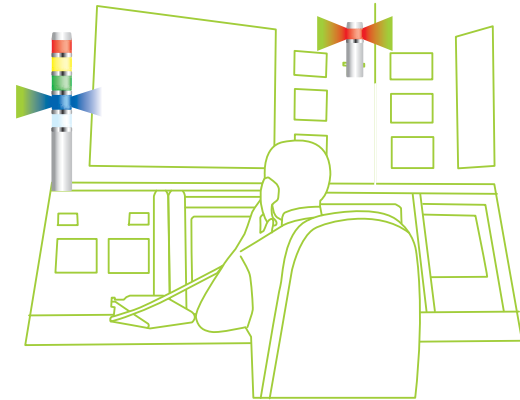
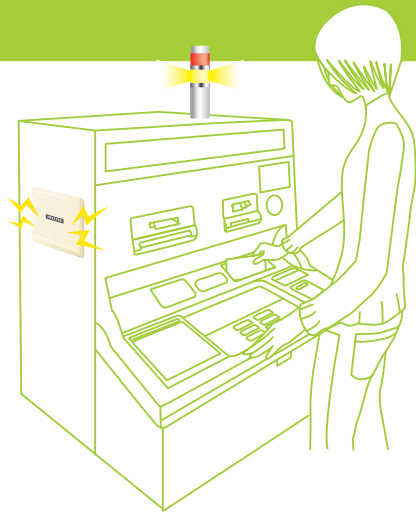


INFORMATION COMMUNICATION

Enables appropriate actions to be taken at call centers, control rooms, and other information control centers.

Indicates the existence of incoming calls, system errors, etc., at call centers and other facilities. Also enables malfunctions at remote locations to be quickly recognized and resolved by displaying such information on the displays for systems installed in control rooms at transport facilities and other sites.

- Signal Tower
- Signal Horn
- Recordable Voice Synthesizer
- Voice Synthesizer
- Network Monitoring System

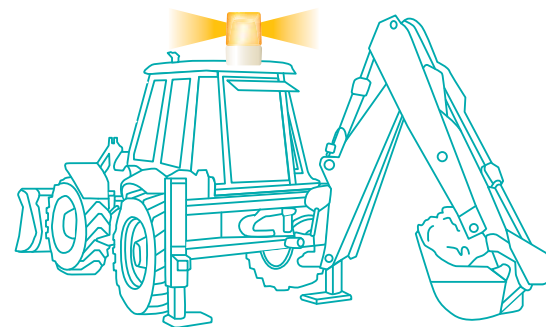
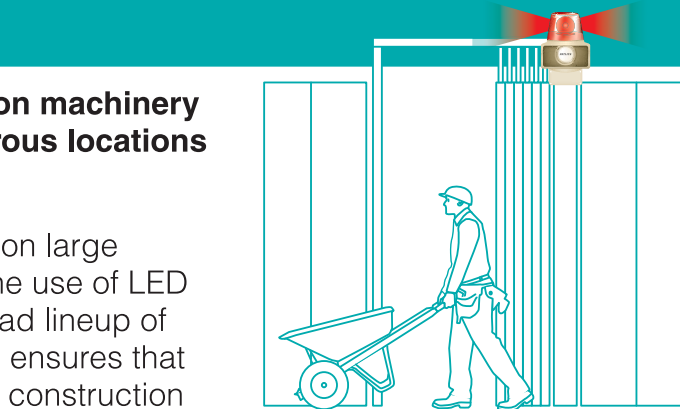


CONSTRUCTION MACHINES

Prevents accidents involving construction machinery and other accidents occurring at dangerous locations such as construction sites.

Helps to mitigate the effects of blind spots on large construction vehicles and machines with the use of LED beacons and other alarm devices. Our broad lineup of products, such as loud-voice synthesizers, ensures that workers are aware of alarms even on noisy construction sites.

- Signal Tower
- Signal Horn
- Recordable Voice Synthesizer
- Voice Synthesizer



Index of ingress protection defined by CEI / IEC 529

IP

First digit: Protection level against human body and solid foreign objects

Code No.

Second digit: Protection level against water intrusion

No protection.	0	No protection.
Protection against solid objects larger than $\phi 50\text{mm}$.	1	Protection against vertical falling drops of water.
Protection against solid objects larger than $\phi 12\text{mm}$.	2	Protection against dripping water when tilted up to 15° .
Protection against solid objects larger than $\phi 2.5\text{mm}$.	3	Protection against spraying water.
Protection against solid objects larger than $\phi 1\text{mm}$.	4	Protection against splashing water.
Protection against dust-limited ingress (dust-protected).	5	Protection against water jets.
Total protection against dust (dust-tight).	6	Protection against heavy seas.
	7	Protection against the effects of immersion.
	8	Protection against submersion.

IP69K (P.20) IP69K is the German DIN 40050 PART9 standard. It is defined as a protection regulation for high temperature and high-pressurized water. Water is heated up to 80°C and sprayed at a water pressure in the range from 80 to 100 bars at 14 to 16 liters per minute at the test object. The test object is at a distance of 100 to 150 mm from the nozzle and sprayed in all directions at 0, 30, 60, and 90 degrees, then sprayed at a horizontal angle while it is being rotated, all done for a period of 30 seconds without being affected by water penetration.

Symbols Used in this Catalog

Light Source

LED High intensity LEDs with 100,000 hours service life and low power consumption.

Xenon Xenon bulb provides high visibility.

Halogen Small, bright, and long-life halogen bulb.

Bulb Economical. Readily available from PATLITE.

Sound

Electronic Sound 1 Alarm sound: Easy to recognize and gentle on the ears.

85dB at 1m Max. sound pressure level will change based on the recorded contents such as melodies, alarms or messages.

4 Channels The total recording time can be divided by the number of channels for making several different messages.

VOICE Messages conveyed audibly.

ALARM Easy to hear alarms, chimes and melodies, but gentle on the ears.

PATLITE's audible alarm products may contain copyrighted music or songs. Patlite has not applied for permission to use the music or songs outside Japan, so please contact your local copyright association before using certain audible products. This disclaimer may not apply if the copyright association has not claimed the copyright of the music or songs in a particular country or jurisdiction.

Types of Protection

Drip-proof Sealed housing protects against water, including rain. Suitable for outdoor use.

Water-proof Provides imperviousness even to direct water jet.

Dust-proof Highly sealed design keeps dust and dirt out. Suitable for outdoor use.

Explosion-proof Meets the explosion-proof standard.

Specifications

IP65 Classification of dust-proof, water-jet flow-proof. Refer to the IP list above for details.

NPN/PNP Open collector Open collector allows direct connection to a PLC without using contacts.


Dual-face reflector The symmetrical dual-face reflectors emit a powerful rotating light.

RoHS EU directive RoHS compliant products.

CAUTION

To ensure correct use of these products, read the Instruction Manual prior to use. Failure to follow all safeguards can result in fire, electric shock or other accidents. Specifications are subject to change without notice.

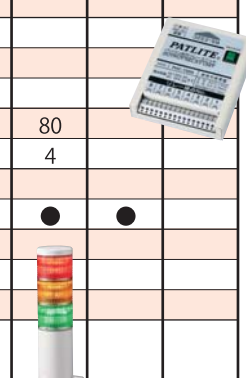
Signal Tower




Size(Diameter)	25mm		30mm		40mm				50mm				60mm				70mm											100mm											
Model	MES	ME	MPS	MP	LCE	LCE-U	LCS	LCS-U	LU5	LU5-U	LE	LEL	LES	LME	LME-U	LME-N	LME-S	LME-Q	LMS	LS7-H	LS7-C	LU7-02S	LU7-02SU	LU7-02SK	LU7-02U	LU7-02UK	LU7-02K	LU7-M2	LU7-M2U	LU7-M2K	LHE	LGE							
Look at page	41-42		43-44		45-46		47-48		53-56		49-50		51-52	49-50	57-58		57-58		59-60		63-64		15-16		67-72											65-66		79-80	
Voltage	12V AC/DC																																						
	24V DC	●	●						●	●										●	●																		
	24V AC/DC			●	●	●	●	●			●	●	●	●	●				●																●	●			
	90-250V AC					◎	◎																											◎	◎	◎			
	100V AC																																			●	●		
	120V AC																																			●	●		
	220V AC																																			●	●		
230V AC																																			●	●			
Body Color	Ivory White					●		●		●	●	●	●	●	●				●	Offwhite	Offwhite	●				●					●			●	●				
	Silver	●	●	●	●			●		●										●	●	●				●								●	●				
	Black																			●	●				●									●	●				
Flashing Function					●	●			●	●	●	●		●	●				●				●	●	●	●	●	●	●	●	●	●	●	●	●	●			
Alarm Function	dB					85	85			85	85	85	85		90	90							90	90	90	90	90	90	90	90	90	90	90	90	85				
	Tones					2	2			2	2	2	2		2	2							2	1	2	2	2	2	2	2	2	2	2	2	2	2			
Open Collector	PNP																																						
	NPN	●	●									●								▲	▲																		
	PNP & NPN			●	●	●	●	●	●	●	●	●	●	●	●	●				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
IP Protection	42	42 (65)	65	65	65	65	54	54	65	65	54	54	54	65	65																				54				

Network

Model	LE-D3	LHE-D3	WEP-D3	LE-K3	WEP-K3	LE-C3	LHE-C3	WEP-C3	NHL	PHE-3FBE1	PHC-100A
Look at page	27-28			29-30		31-32			21-22	33	34
Voltage	24V DC	●	●	●	●	●	●	●			
Network	DeviceNet	●	●	●							
	CompoNet				●	●					
	CC-Link						●	●			
Connect	Ethernet								●	●	●
	USB										
	RS-232C									●	●
Body Color	Ivory White	●	●	●	●	●	●	●	●	●	●
	Silver										
	Black										
Mount	Pole	●			●						
	Direct		●				●				
	Wall			●		●		●			
Alarm Function	dB	85	90	90	85	90	85	90	90	80	
	Tones	2	2	1	2	1	2	2	1	4	
Light	Bulb										
	LED	●	●	●	●	●	●	●	●	●	●
Open Collector	PNP										
	NPN										
	PNP & NPN										
IP Protection	23	65	23	23	23	23	65	23			

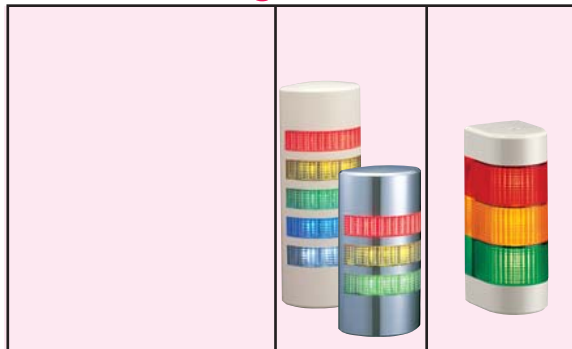


Explosion-proof Signal Tower



Model	EDLM	EDWM	RES-A
Look at page	37-38		39
Voltage	24V AC/DC	●	●(DC Only)
	48V DC		●
	100V AC	●	
	120V AC	●	●
	90-250V AC		◎
Other	220V AC, 230V AC		12V DC, 220V AC, 230V AC, 240V AC
Body Color	Silver	●	●
Dome Lens			Red, Yellow, Green, Blue
Flashing Function	●	●	●
Open Collector	PNP & NPN	●	●
IP Protection	66	66	65

Wall Mount Signal Tower



Model	WE/WEP	WME
Look at page	75-76	77-78
Voltage	24V AC/DC	●
	90-250V AC	◎
Body Color	Ivory White	●
	Silver	●
Flashing Function	●	●
Alarm Function	dB	90
	Tones	2
Open Collector	PNP & NPN	●
IP Protection	65	54

Revolving Warning Light

		82mm			100mm										118mm	138mm	162mm				182mm	186mm	187mm	204mm	
Size(Diameter)		82mm			100mm										118mm	138mm	162mm				182mm	186mm	187mm	204mm	
Model		RLE	RU	RS	RHE	RHEM	RKE	RKEM	RH-A	RK-A	SKH-EA	SKHE	WH-A	WK-A	SKH-A	SKP-A	KP-A	SKHB-100GD	SKL-A	RLR	HP	KG	SKC-A	SKV-A	HKFM
Look at page		98	101		96	97	96	97	102		103	95	104	104	105	106	107	108	109	99	110	111	112	113	114
Voltage	12V DC	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			●	●	●	●	●	●	●
	24V DC	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			●	●	●	●	●	●	●
	24V AC		●	●											●	●									
	48V DC				●		●									●									
	100V AC	●	●	●	●		●		●	●	●	●	●	●	●	●		●				●	●	●	
	120V AC								●	●							●								
	200V AC				●		●		●	●	●	●	●	●	●	●		●		●			●	●	
	220V AC	●	●	●																					
	230V AC																								
	240V AC		●	●					●	●															
100~200V AC					●		●												●						
Body Color	Ivory White	●	●	●	●	●	●	●	●	●			●	●			●	●						●	
	Silver		●	●									●	●					●						
	Black																			●	●	●			
	Same as Dome Lens										●	●			●	●			●				●		
Dome Lens	Red	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Yellow	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Green	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Blue		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Purple														●										
Alarm Function	dB				88	88	88	88	90	90		88	90	90	90			75							
	Tones				1	1	1	1	1	1		1	1	1	1			1							
Light	Bulb		●	●				●	●	●		●	●	●	●		●	●	●		●	●	●		
	LED	●			●	●	●	●			●									●					
	Halogen																				●			●	
	Xenon																								
IP Protection		23	23	23	23	23	23	23	23	23	23	23	54	54	23	23						23	23	66	
	with Gasket	55	55	55	55	55	55	55	55	55	55	55	●	●											



Signal Light

		57mm		82mm		
Size(Diameter)		57mm		82mm		
Model		NE	PS	PSF	PEW	PES
Look at page		85	89		87-88	
Voltage	12V DC		●	●		
	24V DC	●	●	●	●	●
	24V AC		●	●	●	●
	48V DC					
	100V AC				●	●
	120V AC				●	●
	200V AC				●	●
	230V AC				●	●
Body color	Ivory White	●	●	●	●	●
	Silver				●	
Alarm Function	dB				85	
	Tones				1	
Light	Bulb		●	●		
	LED	●			●	●
IP Protection		67	23	23	54	23
	With Gasket		55	55		55

		100mm		162mm	
Size(Diameter)		100mm		162mm	
Model		KHE	KX	XP	KPE
Look at page		86	90	91	92
Voltage	12V DC		●	●	
	24V DC	●	●	●	
	24V AC				
	48V DC		●		
	100V AC		●	●	●
220V AC		●	●	●	
Body color	Ivory White	●	●	●	●
	Silver	●	●		
Alarm Function	dB				
	Tones				
Light	Bulb				
	LED	●			●
	Xenon		●	●	
IP Protection		23	23	23	23
	With Gasket	55	55		



LED Lights

		100,200,300,600,900,1200,1500mm	100mm	200mm	300mm			Φ71	Φ85		
Model	CLA	CLF		CLT			CLE		CLM	LAS	
		CLF10	CLF20	CLT30-24S	CLT30-24L	CLT30-24T	CLE-24	CLE-24N	CLM-24	LAS-M1VK	
Look at page		19-20	123		124			125		126	127
Voltage	24V DC	●	●	●	●	●	●	●	●	●	
	12/24V DC									●	
Light color	Daylight color	●	●	●	●	●	●	●	●	●	
	Yellow	●	●	●	●	●	●	●	●	●	
	Red	●	●	●	●	●	●	●	●	●	
	Warm White	●									
Housing Material	Aluminum		●	●	●	●	●	●	●	●	
	Polycarbonate	●								●	
Cover	Glass				●	●	●	●	●	●	
	Polycarbonate	●	●	●						●	
IP Protection		66/67/69K	67	67	66G/67G	66G/67G	66G/67G	65F	65F	67F	
Proof	Water	●	●	●	●	●					
	Oil				●	●	●				
	Dust	●	●	●	●	●	●				

Cube Tower

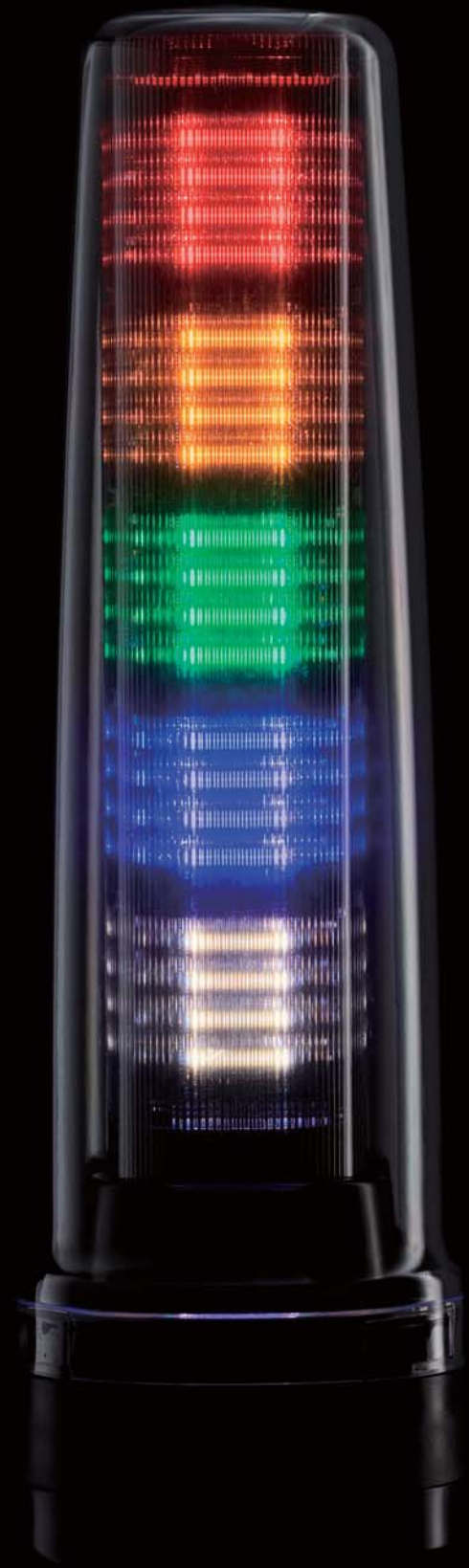
Size		70×70mm	82×82mm	116×116mm
Model		KUS	KJS	KJ
Look at page		115	117	119
Voltage	12V DC		●	
	24V DC		●	●
	24V AC/DC	●		
	48V DC			
	100V AC	●	●	●
	120V AC	●	●	●
Body Color	Ivory White	●	●	●
	Silver			
Alarm Function	dB	80	85	85
	Tones	1	1	1
Open Collector	NPN		●	
IP Protection		54	23	23

Audible Alarms & Annunciators

dB		90	90	90	105		87	87	95	
Model		BM	BD	BK	EWH	EWHS	BSV	BDV	BKV	FV-127JP
Look at page		129	131	133	135		17	141	143	145
Voltage	12V DC		●	●	●	●		●	●	
	24V DC		●	●	●	●		●	●	●
	24V AC/DC	●								
	48V DC				●	●				
	100V AC	●	●	●	●	●		●	●	
	120V AC	▲			●	●				
Body Color	200V AC				●	●				
	220V AC	●	●	●	●	●		●	●	
	Ivory White		●	●	●	●		●	●	
Sound	Black	●	●	●	Red/Yellow	Red/Yellow		●	●	
	Silver						●			
	Patterns	2	4	8	8	4				
Voice	Melodies									
	Chimes	2	32	32	32	32				
	Recordable									●
Open Collector	Channel						15	15	31	127
	Duration						63sec.	63sec.	63sec.	8min.
	PNP	●	●	●	●	●	●			
IP Protection	NPN	●	●	●	●	●	●	●	●	●
	PNP & NPN									
IP Protection		34	54	54	53(65)	53(65)	54	54	54	

dB		105	105	90		90	105	95	
Model		PVW	LKEH-F□	LKEH-FV	RFT	RFV	WG	RT	KJPV
Look at page		147	151		153	155	157	159	161
Voltage	12V DC	●		●	●	●		●	●
	24V DC	●	●	●	●	●		●	●
	24V AC/DC								
	48V DC	●							
	100V AC	●	●	●	●	●	●	●	●
	120V AC							●	
Body Color	200V AC								
	220V AC	●	●	●	●	●		●	●
	Ivory White	●	●	●	●	●	●	●	●
Sound	Black								
	Patterns		8		8			8	
	Melodies								
Voice	Chimes		32		32			32	
	Recordable			●		●	●		
	Channel	15		31		15	3		4
Open Collector	Duration	60sec.		63sec.		63sec.	32sec.		16sec.
	PNP		●	●					
	NPN	●	●	●	●	●	●	●	●
IP Protection		53	53	53	54	54		23(65)	23

New Products



LS7

Signal Tower

Coming Soon

LED



90dB at 1m
(FB type)

Electronic Sound 2
(FB type)

ø70

NPN/PNP
Open collector



New concept! Smart & smooth signal light body which improves harmony with equipment.

M12 connector specification Lineup

In addition to the existing lead wire, M12 connector quick disconnect is also available. Moreover, when moving to carry and to go out of the device, it is possible to detach it easily with the M12 connector.



● With smooth surface body together with the outer lens structure, neither dust nor grim pile up easily.

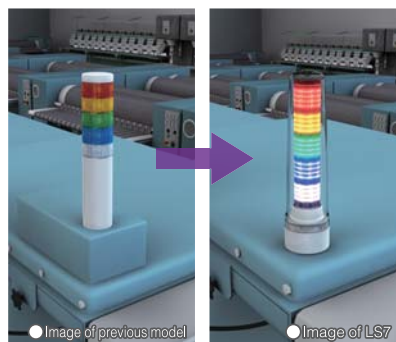
● Support open collector and possible to drive directly through PLC.

● Conforms to CE requirements.



A smooth-surfaced body which does not expose any metal

By changing the surface of the body into a smoother form, the adhesion of water and dust is reduced. Also, the structure does not have screws, shafts, etc., exposed, which gives comfort for applications in the lithium ion battery manufacturing and food processing industries. And, with the outer lens structure, the risk of environmental stress cracks due to oil mist is reduced. The lens cover is made of shock-resistant polycarbonate.



M12 Connector Wiring & Stackable Construction

The stackable design and M12 connector quick disconnect (Cable Sold Separate) can drastically reduce labor and time. Moreover, the disconnection and reconnection of the body when removing it to relocate a machine has become smoother.

Optional parts

Like the body, the smooth-shaped platform bracket won't collect water or dust. Since no metal parts like screws and shafts are exposed, worries of food tampering can be put to rest in the food process lines.

Option

Platform Bracket SZ-100



SZ-100 (Off-white) SZ-100-D (Dark Gray) SZ-100-S (Silver)

Wall Mounting Bracket SZ-110



M12 Connector & Cable
(Manufactured by the OMRON Corp.)

SZ-120-02 Cable Length 2m
(XS2F-D821-DH0-R)

SZ-120-05 Cable Length 5m
(XS2F-D821-GH0-R)

SZ-120-10 Cable Length 10m
(XS2F-D821-JH0-R)

※ Only for connecting to the LS7.

Replacement Parts



Outer Cover for LS7**
Material: Polycarbonate



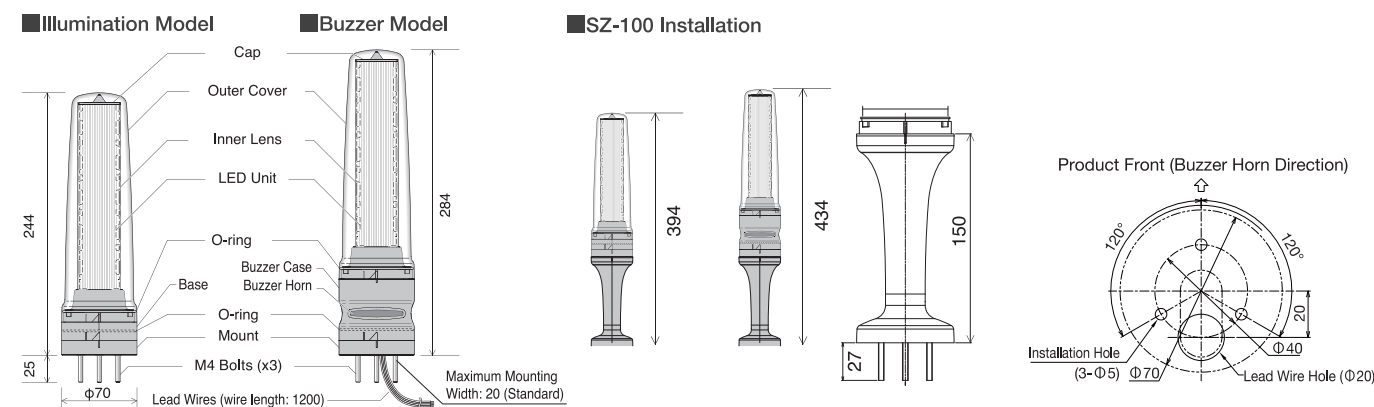
O-ring for LS7
Material: Silicon



Mount Cover for LS7 (Accessory)
Material: Silicon

※ When changing the outer cover, change the O-ring as well.

Dimensions



How to Order

Wiring Diagram

Note: See page 168 for wiring diagram

Specifications

Model	Number of Lighting Units	Body Color	Rated Voltage	Mounting	Rated Current Consumption	Maximum Rated Current	Maximum Sound Pressure	Operating Temperature Range	Protection Rating	Mass: Lead Wire Type (H)		Mass: M12 Connector Type (C)	
										Illumination (No Mark)	Illumination + Flash + 2 Buzzer Alarms (FB)	Illumination (No Mark)	1 Buzzer Alarm (B)
LS7-302	3 Tiers	Off-white (No Mark) Dark Gray (D) Silver (S)	DC 24V (±10%)	Direct (Indoors Only)	Red: 20mA Yellow, Green, Blue, White: 30mA Buzzer: 40mA	Red: 35mA Yellow, Green, Blue, White: 40mA Buzzer: 55mA	Buzzer1 ab. 82dB Lead Wire Type (Intermittent Beep1) M12 Connector Type (Continuous Beep) Buzzer2 ab. 85dB Lead Wire Type (Intermittent Beep2) M12 Connector Type (None)	-30°C ~ 60°C	Illumination Type IP65 Buzzer Type IP54	0.28kg	0.37kg	0.26kg	0.32kg

LED Signal Tower **LS7-** ① 02 ② ③ ④ W ⑤ — ⑥

① No. of Lighting Units 3:3 Tiers 5:5 Tiers ② Body Color No Mark:Off-white D:Dark Gray S:Silver ③ Lighting No Mark:Illumination Only F:Illumination + Flashing ④ Buzzer No Mark:No Buzzer B:Buzzer ⑤ Wiring C:M12 Connector H:Lead Wires ⑥ LED Color R:Red G:Green C:White Y:Yellow B:Blue N:Blank

Ex.: LS7-302WC-RYGNN

• Body Color...Off-white • Lighting...Illumination • Buzzer...None • Wiring...M12 Connector • LED Colors:Red, Yellow, Green, (Blank), (Blank)

※ F type models with Illumination + Flashing are only available for Lead Wire and requires an H mark.
※ C type models (M12 Connector Type) are only available with a continuous sound buzzer.

BSV

Voice Annunciator



87 dB at 1m

63 Second

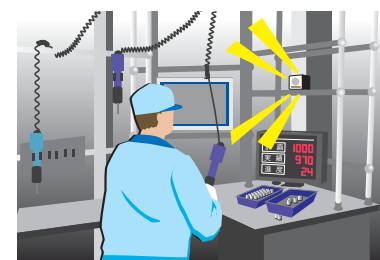
IP54 Upright direction only.

NPN
Open Collector

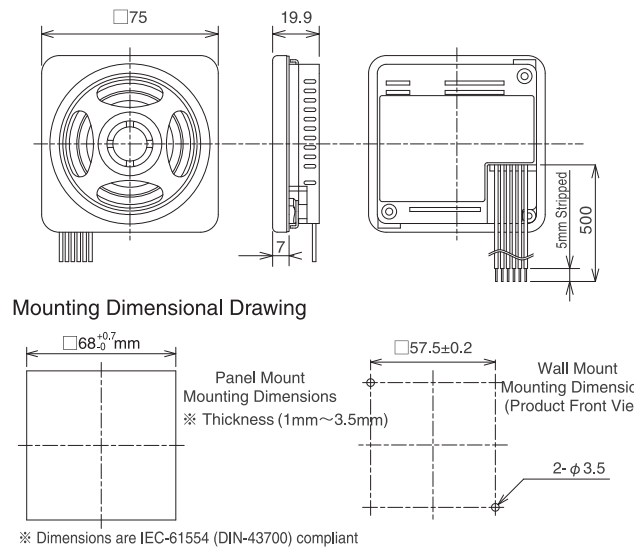


The unbelievably thin design adds space-saving for equipment.

- A compact design of only 19.9mm thick.
- Two choices for installation, panel mount or wall mount.
- Despite the thin shape, it has a Loudness for a maximum of 87dB (at 1m).
- The volume control is accessible from the front.
- Diverse operational modes in combination with commands can be setup for the right application.
- Sound reduction is made with just one signal input. (When the sound reduction function is used, the number of playback messages is reduced.)
- Can be used with transistor driven inputs. (Either NPN or PNP)
- It complies with Europe's environment-friendly RoHS Directive.
- Listed by Underwriters Laboratories Inc.
- Protection Rating of IP54 (Only for front panel mount attachment).
- The use of the SD card can allow changing messages while out in the field.
- Conforms to the CE requirements.



Dimensions



Note: See page 177 for wiring diagram

From the front, easy installation

With only the need to access it from the front, the front cover is easily removable for installation and volume adjustment, which can reduce labor time for maintenance, etc.



How to Order

BSV-24NM-W

Transistor Type	Front Cover Color
N : NPN	W : Off-white
P : PNP	D : Dark Gray
	S : Silver
	Pre-recorded Message
	No Code : None
	(15 Built-in Alarms)
	M : Pre-recorded Messages

-M: If the pre-recorded voice message data is overwritten, all of it will be erased. Also, message data cannot be exported.



Actual Size

Panel Mount



Wall Mount



SD card slot is built-in. MP3 data rewriting can be done with an SD card. In addition to the option of message rewriting using the exclusive application software, MP3 data file name change or rewriting is possible, even when dedicated software is not used.

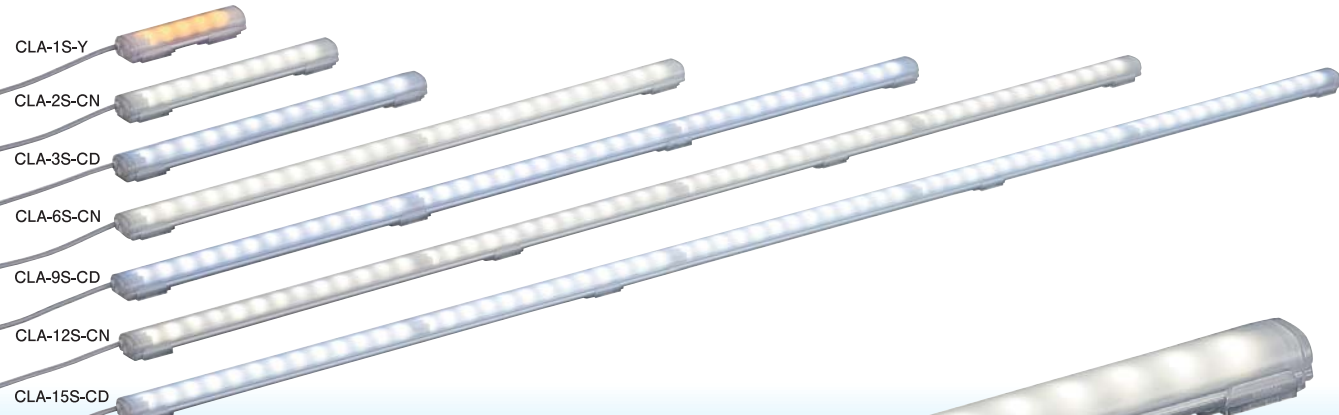
BSV Type

Model	Transistor Type	Rated Voltage	Voltage Range	Power Consumption	Volume	Relative Humidity	Maximum Playback	Number of Playback Messages	Protection Rating	Mass	Front Cover Color	Pre-recorded Data
BSV-24NM-W/D	NPN Transistor	DC 12-24V	10.8V DC to 26.4V DC	3.5W	Max 87dB (at 1m)	-10°C to +50°C (Less than 85%RH)	63 sec.	4 (Bit Input) 15 (Binary Input)	IP54	100g ±10%	Off-white (-W) Dark Gray (-D)	Voice
Silver (-S)												
Off-white (-W) Dark Gray (-D)											Alarm	
BSV-24N-S	PNP Transistor	DC 12-24V	10.8V DC to 26.4V DC	3.5W	Max 87dB (at 1m)	-10°C to +50°C (Less than 85%RH)	63 sec.	※ When using the Sound Reduction Function: 3 (Bit Input) 7 (Binary Input)	Upright Position Panel Mount Only	100g ±10%	Off-white (-W) Dark Gray (-D)	Voice
Silver (-S)												
Off-white (-W) Dark Gray (-D)											Alarm	

(Note) The sound pressure level is based on measurements under controlled conditions (voice-synthesized 1 kHz sine wave playback from a distance of 1 meter), therefore the surrounding environmental conditions and message content will result in different values for the sound pressure level.
 ※ Even when starting two or more units simultaneously, a lag will occur during message playback. This product is not designed for use in motor vehicles.

CLA

LED Light Bar



CLA-CN (Natural White: 4800K)

LED



IP66/67/69K

More than a diffusion LED light bar, it can be used in places like the food-processing industry with its protection rating of "IP69K", which can endure high-pressurized hot water washing.

- It is 30% brighter than the previous model. (Model CLB-N 300lx -> 400 lx/0.5 m. CLA3S Model Comparison)
- Attained the IP69K standard, which is a demand for industries which requires 80 °C of hot-water jet-stream washing, such as for meat / food processing, beverages and medicine manufacturing to handle the waterproofing performance. (The industry's first based on corporate investigation) It also corresponds to IP66/67 standards.
- The product also suppresses heat radiation temperature to 40 degrees or less (34% reduction in comparison to a 20W fluorescent light), and eases the burden for environmental installation.
- The product lineup includes seven sizes (100-1500mm), three colors (Daylight, Natural White, Amber), and four types of attachments, including a magnet attachment. It can adapt to various scenes.
- The operating temperature limit of -40 to +60 °C allows the possibility for installation in a sub-freezing temperature environment, such as a cold storage warehouse.
- Constructed with strong polycarbonate resin, which is resistant to shock.
- The use of the SD card can allow changing messages while out in the field.
- Corresponds to Europe's RoHS Directive. And obtained ECOLAB certification.
- Conforms to the CE requirements.
- UL Listed (File No. E306141).

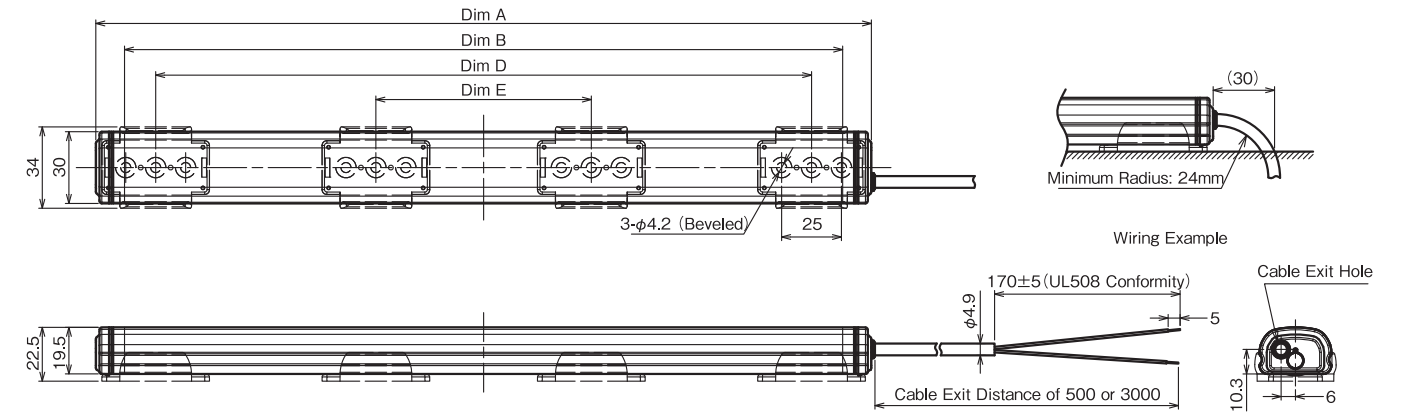
Luminous Color

A 6800K daylightlight light bar at a distance of 50 cm from the center of irradiation has measured a maximum brightness of 400lx.

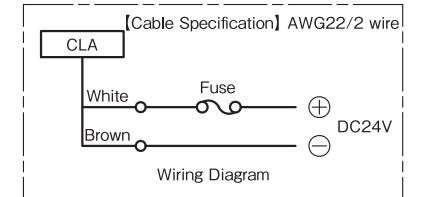


With a high-intensity lumination, its suitable for applications such as lighting processing machinery workspace, for lighting up a video inspection system to light up more details, etc.

Dimensions Unit: mm



Model Name	Dim A Total Length	Dim B Lighting Area	Dim D Mounting Pitch	Dim E	Standard Bracket SZ-310AR
CLA1S-	124	100	74	-	2 pcs.
CLA2S-	224	200	174	-	2 pcs.
CLA3S-	324	300	274	-	2 pcs.
CLA6S-	624	600	574	-	2 pcs.
CLA9S-	924	900	874	290	4 pcs.
CLA12S-	1224	1200	1174	390	4 pcs.
CLA15S-	1524	1500	1474	490	4 pcs.



Options



How to order

CLA1S-24-CD-30	
Light Bar Length	Cable Length
1 : 100mm	No Code : 0.5m
2 : 200mm	30 : 3.0m
3 : 300mm	
6 : 600mm	Luminous Color
9 : 900mm	-CD (Daylight)
12 : 1,200mm	-CN (Natural White)
15 : 1,500mm	-Y (Amber)

※ -Y is only available in 100mm and 300mm lengths.

CLA Type

Model	Luminous Color	Rated Voltage	Operating Voltage Range	Rated Current Consumption	Center Radiation (lx/50cm)	Main Body Material	Operating Temperature Range	Mounting Direction	Protection Rating	Vibration Resistance	Mass
CLA1S-24-CD	Daylight	DC 24V (Polarized)	DC24V±10%	104mA	140	Body: Polycarbonate	-40°C to +60°C (RH 90% or less No Condensation)	Any Direction (Indoor Use)	IP66/67/69K	19.6m/s ²	80 g
CLA1S-24-CN	Natural White				78						130 g
CLA1S-24-Y	Amber				270						180 g
CLA2S-24-CD	Daylight			240mA	400						340 g
CLA2S-24-CN	Natural White				220						500 g
CLA3S-24-CD	Daylight				480mA						660 g
CLA3S-24-CN	Natural White			720mA	810						820 g
CLA3S-24-Y	Amber				960mA						
CLA6S-24-CD	Daylight				1,200mA						
CLA6S-24-CN	Natural White										
CLA9S-24-CD	Daylight										
CLA9S-24-CN	Natural White										
CLA12S-24-CD	Daylight										
CLA12S-24-CN	Natural White										
CLA15S-24-CD	Daylight										
CLA15S-24-CN	Natural White										

NHL

Network Monitor Signal Tower



Network Monitoring
With a New Look

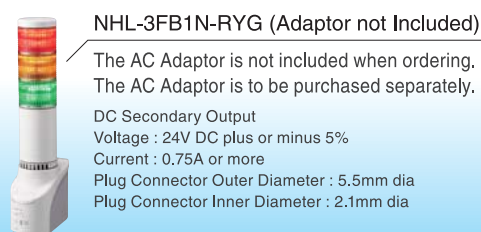


2 Model Selections Available



NHL-3FB1U-RYG (Adaptor Included)

The AC Adaptor is included when ordering.



NHL-3FB1N-RYG (Adaptor not Included)

The AC Adaptor is not included when ordering. The AC Adaptor is to be purchased separately.

DC Secondary Output
Voltage : 24V DC plus or minus 5%
Current : 0.75A or more
Plug Connector Outer Diameter : 5.5mm dia
Plug Connector Inner Diameter : 2.1mm dia



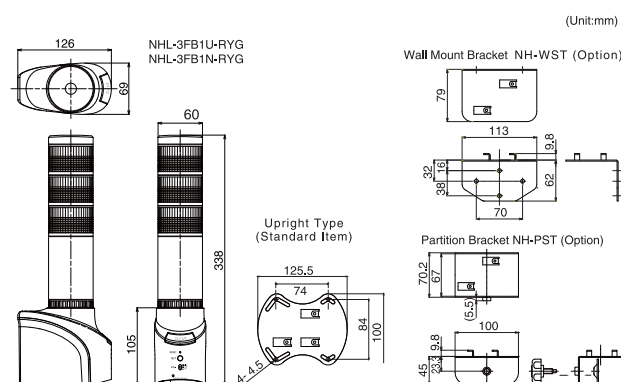
Function of SNMP V1 is limited.



∅60

- Supports such protocols like HTTP, SMTP, RSH, and SNMP.
- It easily works with NMS (network management/integration / monitoring) software, etc.
- It's not dependent upon the OS and the RSH Commands are easily controllable.
- It's also easily controllable by the SNMP SET command.
- It contains the ICMP protocol so PING monitoring for a maximum of 24 nodes can be setup.
- Detailed setup functions can be accessed via a web browser to the Main Unit because it contains an IP address.
- Four kind of buzzer sounds in correlation to the prioritized monitoring level can be used.
- Conforms to the CE requirements. (AC Adaptor does not carry the CE mark.)

Dimensions



Useful in Various Environments

It can be used in various environments with the various brackets.



Upright Type (Standard)

Wall Mount Bracket (Option)

Partition Bracket (Option)

Specifications

Model	NHL-3FB1U-RYG	NHL-3FB1N-RYG
Rated Voltage (Body)	DC24V	
AC Adaptor Rated Voltage	AC 100V to 240V	
AC Adaptor Operating Voltage Range	AC 90V to 264V	
Power Consumption	Body 2.0W, Red 1.5W, Amber 1.5W, Green 0.8W, Blue 0.8W, White 0.8W, Buzzer 2.0W	
Operating Temperature Range	0°C to 40°C (No Condensation)	
Storage Temperature Range	-10°C to 60°C (No Condensation)	
Relative Humidity	from 20 to 80% RH (No Condensation)	
Insulation Resistance	More than 1M at DC500V between the terminals and the chassis	
Withstanding Voltage	AC1000V and less than 10mA applied for 1 minute between the terminals and chassis without breaking insulation	
EMI Noise Characteristics	AC1000Vp-p Pulse Width: 1μsec	
Vibration Resistance	19.6m/s ²	
Sound Level	HIGH: 80dB or more / LOW: 70dB or less (Distance from buzzer diaphragm (Upright Position) of 1m and "A" balance)	
Buzzer Sound	Three-position adjustable switch for "HIGH", "LOW" and "OFF"	
Signal Tower	NHL: 60 Type Clear Globe	
"CLEAR" Switch	Pushbutton Switch	
"TEST" Switch	Pushbutton Switch	
"RESET" Switch	Pushbutton Switch	
"BUZZER" Switch	Slide Switch	
Communication Method	Ethernet	
	Physical Layer: 10BASE-T/100BASE-TX (Auto-negotiation/ Full Duplex/ Half Duplex)	
	Data Link Layer: CSMA/CD	
	Network Link Layer: IP · ARP · ICMP	
	Transport Layer: TCP · UDP	
	Application Layer: HTTP · RSH · SMTP · SNMP	
	POP · DNS · Socket · NTP · DHCP	
Mounting Location	Indoors Only	
Mounting Direction	Desktop or wall-mount in the upright position	
Mass (AC Adaptor not included)	800g	
Protection Rating	IP20 (Not Waterproof)	
Accessories	AC Adaptor, Rubber Feet, Adhesive Seal, Support Base	Rubber Feet, Adhesive Seal, Support Base

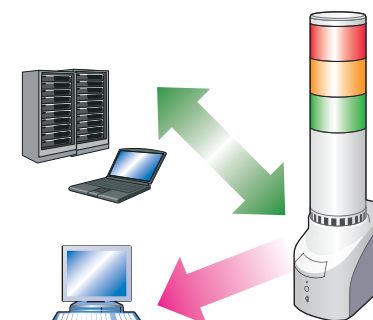
Easy to integrate for a broad range of applications

PING Device Monitor

Monitors Device Existence on the Network

Each NH Tower initiates PING interaction for up to 24 network devices. When a PING response fails, light/sound signaling occurs to warn administrators.

Among the 24 nodes, four nodes (21st to 24th) can be set up for more detailed monitoring parameters.



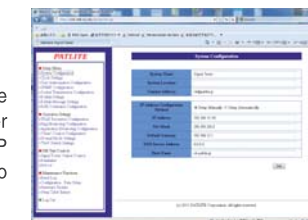
SNMP v1-v2c

Monitor networking equipment at a low cost
Many network devices (UPS, printers, routers, switches, etc.) generate SNMP TRAP messages when a failure occurs. The NH tower can trigger light/sound signaling based on these messages to warn the administrator.

It can distinguish the variable bindings. Registration of 16 groups (4 nodes per group) is possible.

Easy setup from a web browser

The detailed setup for the Body can be accessed over a web browser to its IP address. Firmware can also be upgraded remotely.



Web Setup Screen

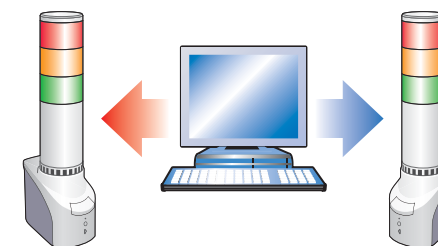
Application Monitor

The tower can monitor important background applications and signal the administrator upon any failure.

It offers ample amounts of communication commands

RSH

It is easily controllable by RSH commands, which is a flexible protocol. Network integrated management software and event information, including various monitor tools etc., are turned into a trigger to cause lighting, flashing, and the buzzer to sound in synchronicity with the light of the Signal Tower.



Event Occurrence: Command (Lighting Tier, Sounding Buzzer)
RSH Example Code: rsh 192.168.10.1 -l root alert 111001

SOCKET Transmission

PHN Command Compatibility

It is controllable with 2 byte commands. Compatible with NHE-3FB, NHC-3FB, NHM-3FB, and PHN-3FBE1. Some functions are limited.

Event Occurrence:
Command (Lighting Tier, Sounding Buzzer)
PHN Example Code: 0x57,0x17

New PNS Command Compatibility

By using the PNS command, control of all pattern information is attainable.

The PNS command is a unique command from PATLITE.

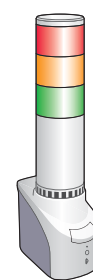
Event Occurrence: Command (Lighting Tier, Sounding Buzzer)
PNS Example Code: 0x58,0x58,0x53,0x00,0x00,0x06,0x01,0x01,0x01,0x00,0x00,0x01

Has Diagnostic / Reporting set function

E-mail Transmission

Send e-mail with a maximum of eight events (selectable)

The subject name and text corresponding to a diverse event can be created. It exceeds in the complete e-mail authentication function securely.



SNMP v2c

SNMP TRAP Transmission
Can transmit from a maximum of eight locations.

Self-diagnosis



The test switch on the front of the Body can check the Signal Tower and buzzer operation functions easily without it being controlled through the network.

Network



WD

Wireless Data Acquisition System

Wireless LED Signal Towers for Data Acquisition and Remote Monitoring



IEEE802.15.4
2.4GHz



AirGRID

Data Acquisition and Remote Monitoring via Wireless Network of PATLITE Signal Towers

PATLITE wireless add-on modules and receivers make PATLITE signal towers capable of sending electrical signals over a wireless network to a data center. PATLITE's unique wireless add-on modules and receivers are a practical and economical solution for data acquisition, machine status remote monitoring, and supervisory control of industrial processes. The AirGRID is an effective solution for lean manufacturing and the visual factory. PATLITE wireless add-on modules comply with IEEE802.15.4, operating in the 2.4 GHz band.

1) Simply add to a PATLITE signal tower

Operating conditions of Patlite signal towers installed on production machines or process systems can be transmitted wirelessly to a data center. Data acquisition and remote monitoring are possible instantly and economically.

2) Wireless technology eliminates tedious wire installation

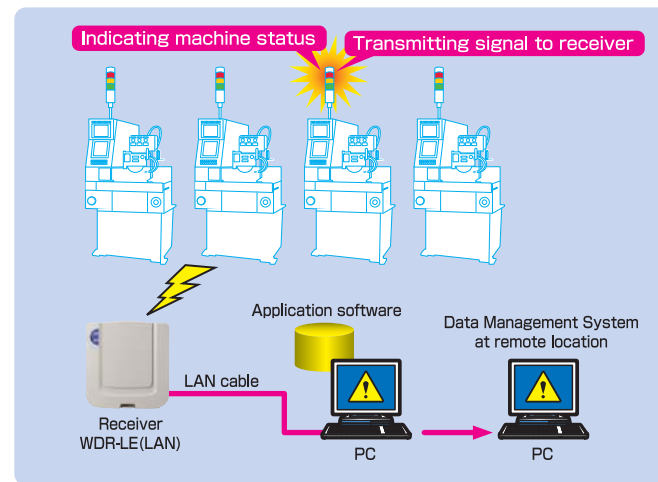
Wireless add-on modules source power from PATLITE signal towers and transmit electrical signals to the data center. Therefore wiring, component installation and related costs are minimal.

3) Multi-hopping topology and high transmitting reliability

With wireless multi-hopping topology, which can minimize potential transmitting failures or errors, a high level of stable operation and transmitting reliability are expected.

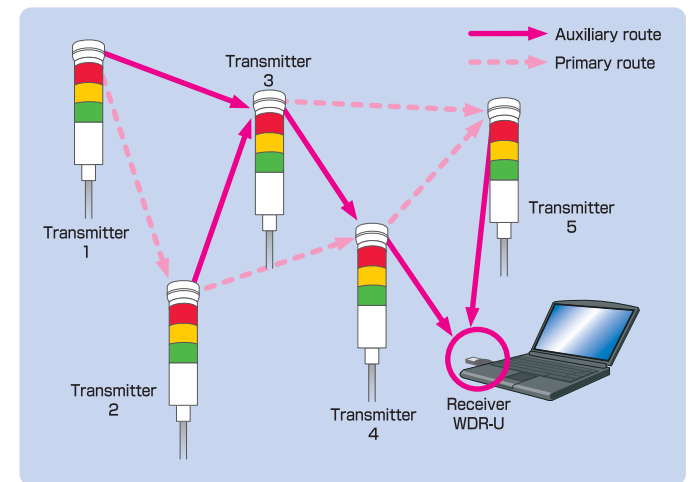
Typical Application

Multiple stand-alone machines can be networked by the AirGrid for data archiving and remote monitoring. The status and condition of the machines are indicated by the PATLITE signal towers.



Wireless Concept IEEE 802.15.4 2.4GHz

- Wireless hopping/routing functions and mesh topology can make flexible and reliable wireless network configurations possible.
- Data archived by the AirGRID is stored in a file format CSV which any off-the-shelf data management software e.g, SCADA can handle.



Specifications

Transmitters

	WDT-6M	WDT-5E
Model		
Applicable Signal Tower	LME series	LE series (24VDC only)
Rated Voltage	24VDC no polarity	
Voltage Range	20.4VDC - 26.4VDC	
Current Consumption	35mA	
Operating Temperature	-10°C~60°C (No condensation)	
Environment Humidity	85% RH or less	
Environment Temperature	-20°C~70°C (No freezing)	
Installation	Upright position (indoor use only)	
IP Protection	Determined by PATLITE signal towers	
Dimension	φ 65xheight 36.9mm	φ 65xheight 38.5mm
Mass	55 g	

(*1) Ask PATLITE sales representatives for specific models of PATLITE signal towers which are compatible with the WDT-6M and WDT-5E.

Features

Wireless Standard	IEEE 802. 15. 4
Frequency Band	2400MHz-2483.5MHz (16 channels by 5MHz step from 2405MHz)
Installation	up to 20 units (*1)
Wireless Output	Max. 1mW
Compliance	FCC, R&TTE, CE(*2), RoHS

(*1) Numbers of units to install are determined by wireless environment and installation location.
(*2) Conforms to the CE requirements.

Receivers

	WDR-LE (LAN)	WDR-U (USB)
Model		
Rated Voltage	24VDC (Power supply not included)	5VDC(with USB bus power)
Voltage Range	20.4VDC-26.4VDC	4.5VDC-5.5VDC
Current Consumption	150mA	80mA
Operating Temperature	-10°C~60°C (No condensation)	5°C~40°C (No condensation)
Environment Humidity	85% RH or less	85% RH or less
Environment Temperature	-20°C~70°C (No freezing)	-5°C~50°C (No condensation)
Installation	horizontal, wall mount (indoor use only)	USB port of PC (no USB hub) (indoor use only)
IP Protection	IP20	—
Dimension	height 131mmxwidth 125mmxdeep 38.5mm	height 11mmxwidth 28.5mmxdeep 66.5mm
Mass	165g	15g



Application software(supplied free) WDS-AE

The software WDS-AE stores data which the WDR-LE/U receives from WDT-6M/5E in the file format of CSV.

***This product operates on a frequency in compliance to FCC laws in the United States and its territories. Radio Laws for individual countries vary, and it is, therefore, the responsibility of the customer to comply with the laws in the country which applies to the application. Our company takes no responsibility directly, or indirectly, for claims from a customer or third party regarding Radio Laws or Wireless ordinance.**

DeviceNet Supported

LHE-D3 / LE-D3 / WEP-D3

DeviceNet™

LED



90dB at 1m
(LE type: 85dB at 1m)

Electronic Sound 2
(WEP type: 1 sound)

IP23



LHE-D3 type

LE-D3 type

WEP-D3 type

DeviceNet Supported Signal Tower for Open-field Network

- Single Cable: Uses DeviceNet cable only, which transfers power and signals for control.
- Easy Connection: Directly connect up to 64 linked DeviceNet units with DeviceNet cable, without I/O terminals.
- Required Device: DeviceNet-type controller (i.e. DeviceNet Master).
- Data Storage: Addresses set by dip switch.
- Light Pattern: Continuous only, no flashing.
- B type: Built-in alarm; LHE: 90dB at 1m (adjustable), LE: 85dB at 1m (adjustable), WEP: 90dB at 1m.
- Sound Pattern: LHE / LE: Intermittent tone, Alarm 1: short beep, Alarm 2: long beep. WEP: 1 alarm, continuous tone only.
- Interchangeable modules*: No re-wiring even after installation, except for WEP type.

*Refer to the standard non-field bus model for details.

ø70 IP23

LHE-D3
LHE-D3B

- Sound Pattern: Short beep or long beep up to 90dB at 1m.
- Installation: Upright and indoors only.

ø50 IP23

Direct Mount
LE-D3
LE-D3B
Pole Mount
LE-D3P
LE-D3BP

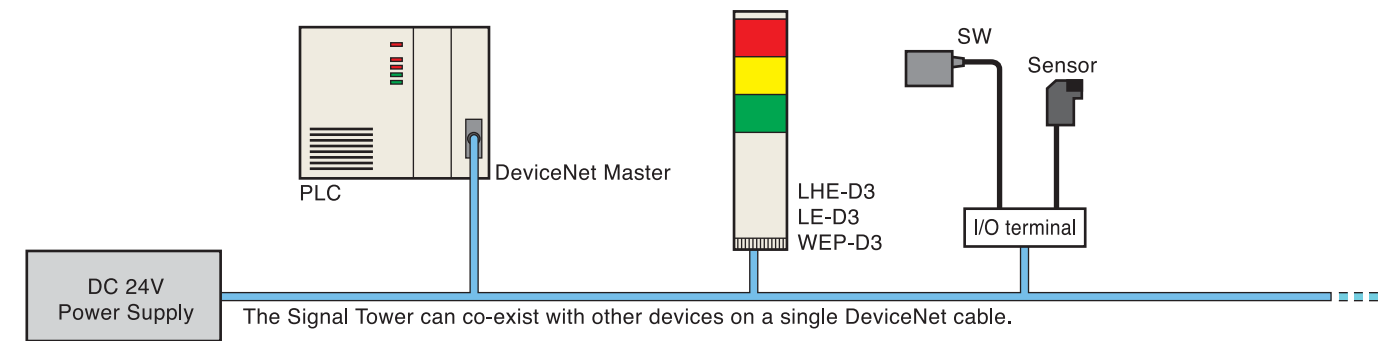
- Original Dual Reflection System: For enhanced light diffusion, creating bright distinctive illumination while saving energy (Patent Pending).
- LE-D3B: Intermittent tone, up to 85dB at 1m.
- 2 Selections: 1) fast beep; 2) slow beep
- Installation: Indoors and upright only.
- Options Available: Direct or pole mount.

Profile
37.5mm

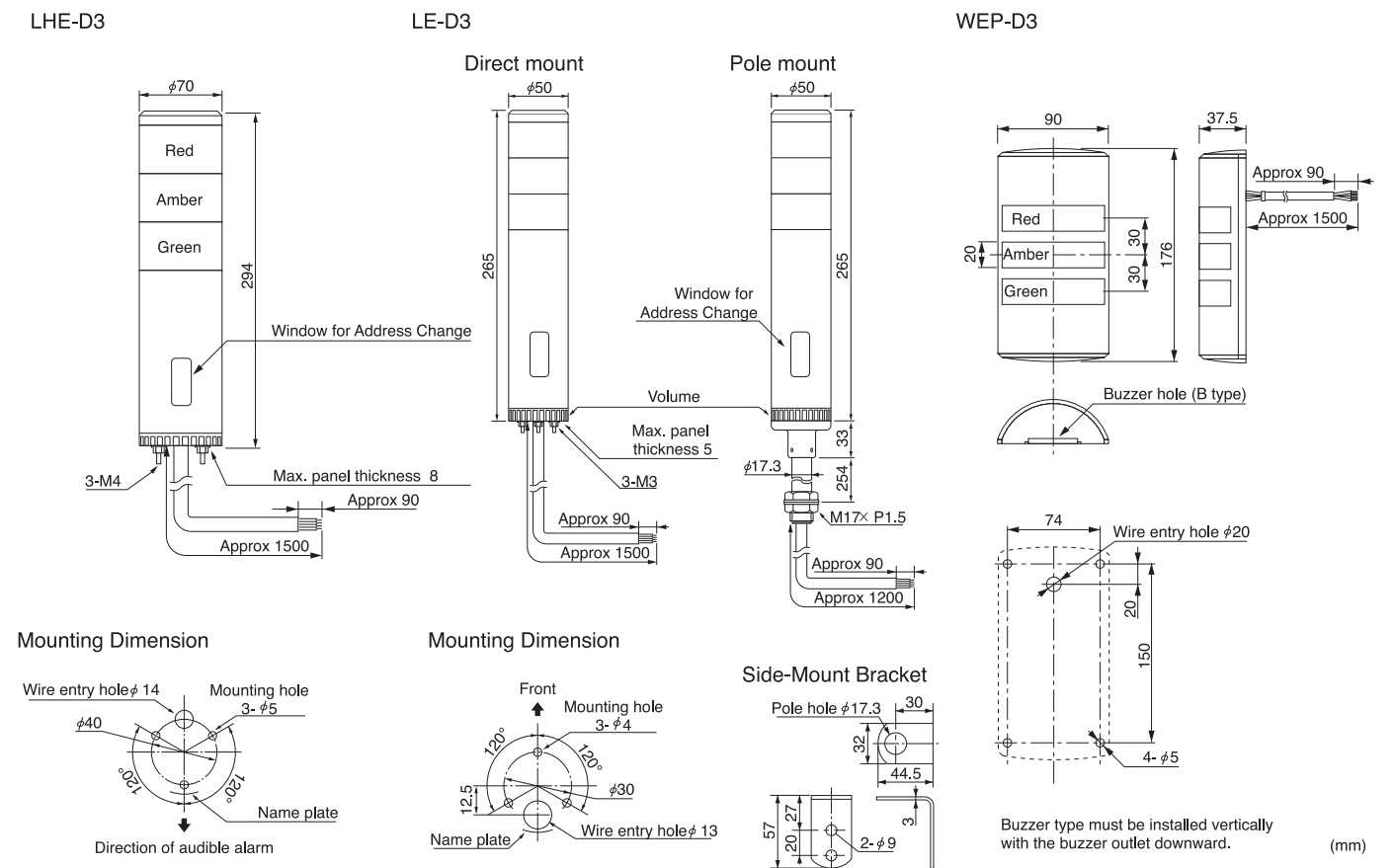
WEP-D3
WEP-D3B

- Clear Vertical Cut Lens: For enhanced illumination over a wide perspective.
- Sound Pattern: Continuous tone up to 90dB at 1m.
- Installation: Indoors only, vertical or horizontal, either direction except for alarm (B) type: alarm exit must face downward.

Application Example



Dimensions



Wire Color	Signal
RED	V+ (24V DC)
WHITE	CAN - H
(NONE)	DRAIN
BLUE	CAN - L
BLACK	V- (0V)

LHE-D3 / LE-D3 / WEP-D3 Type

Light Style	Model	Audible Alarm	Signal Line	Current Consumption		
				DeviceNet PCB (Max.)	LED Unit (Max.)	Audible Alarm (Max.)
3 Lights (Red, Amber, Green)	LHE-D3	N/A	V+ (24V DC), CAN - H, DRAIN, CAN - L, V- (0V)	60mA	50mA (Red, Amber) 40mA (Green)	—
	LHE-D3B	available			—	40mA
	LE-D3W/LE-D3P	N/A			25mA (Red, Amber) 20mA (Green)	40mA
	LE-D3BW/LE-D3BP	available			—	—
	WEP-D3	N/A			30mA (Red, Amber) 25mA (Green)	—
	WEP-D3B	available			—	40mA

Electric power is supplied by DeviceNet cable. Patlite's standard signal tower for field bus application is the 3-light style.

CompoNet Supported

LE-K3 / WEP-K3



LED



90dB at 1m
(LE type: 85dB at 1m)

Electronic Sound 2
(WEP type: 1 sound)

IP23



LE-K3 type

WEP-K3 type

DeviceNet Supported Signal Tower for Open-field Network

- Single Cable: Uses DeviceNet cable only, which transfers power and signals for control.
- Easy Connection: Directly connect up to 64 linked DeviceNet units with DeviceNet cable, without I/O terminals.
- Required Device: CompoNet-type controller (i.e. CompoNet Master).
- Data Storage: Addresses set by dip switch.
- Light Pattern: Continuous only, no flashing.
- B type: Built-in alarm; LHE: 90dB at 1m (adjustable), LE: 85dB at 1m (adjustable), WEP: 90dB at 1m.
- Sound Pattern: LHE / LE: Intermittent tone, Alarm 1: short beep, Alarm 2: long beep. WEP: 1 alarm, continuous tone only.
- Interchangeable modules*: No re-wiring even after installation, except for WEP type.

*Refer to the standard non-field bus model for details.

ø50 IP23

Direct Mount
LE-K3
LE-K3B
Pole Mount
LE-K3P
LE-K3BP

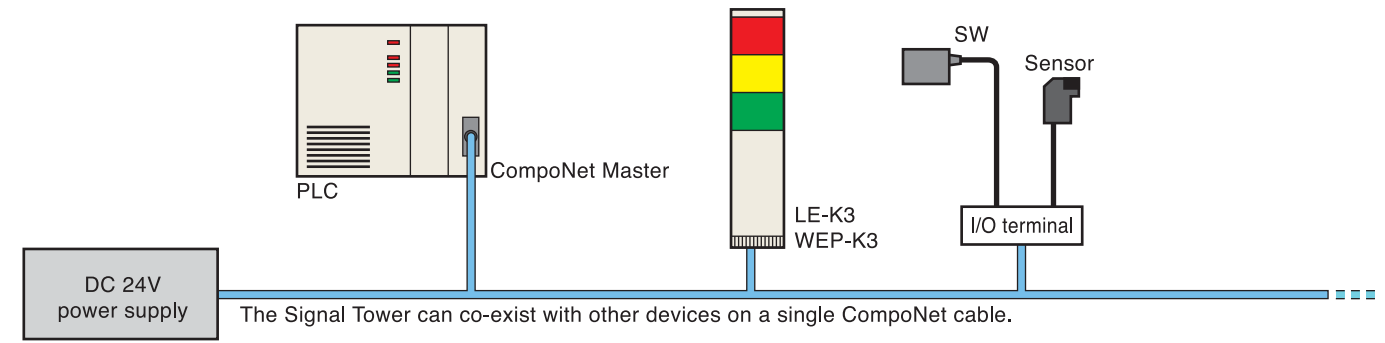
- Original Dual Reflection System: For enhanced light diffusion, creating bright distinctive illumination while saving energy (Patent Pending).
- LE-D3B: Intermittent tone, up to 85dB at 1m.
- 2 Selections: 1) fast beep; 2) slow beep
- Installation: Indoors and upright only.
- Options Available: Direct or pole mount.

Profile
37.5mm

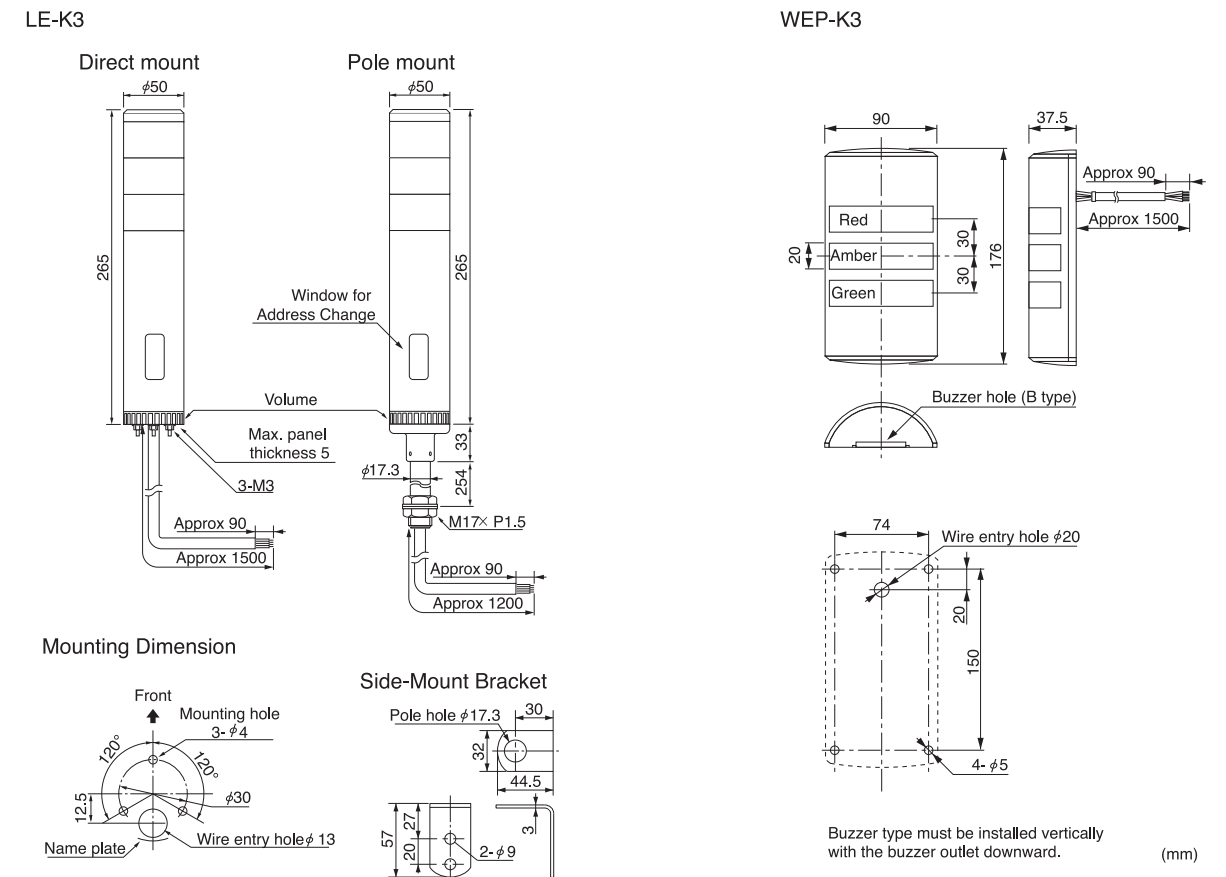
WEP-K3
WEP-K3B

- Clear Vertical Cut Lens: For enhanced illumination over a wide perspective.
- Sound Pattern: Continuous tone up to 90dB at 1m.
- Installation: Indoors only, vertical or horizontal, either direction except for alarm (B) type: alarm exit must face downward.

Application Example



Dimensions



Wire Color	Signal
BROWN	BS+ (24V DC)
BLACK	BS- (0V)
WHITE	BDH (H) Line
BLUE	BDL (L) Line

LE-K3 / WEP-K3 Type

Light Style	Model	Audible Alarm	Signal Line	Power Line	Current Consumption		
					CompoNet PCB (Max.)	LED Unit (Max.)	Audible Alarm (Max.)
3 Lights (Red, Amber, Green)	LE-K3W/LE-K3P	N/A	BDH BDL	BS+ (24V DC) BS- (0V)	60mA	25mA (Red, Amber) 20mA (Green)	—
	LE-K3BW/LE-K3BP	available					40mA
	WEP-K3	N/A				30mA (Red, Amber) 25mA (Green)	—
	WEP-K3B	available					40mA

Electric power is supplied by CompoNet cable. Patlite's standard signal tower for field bus application is the 3-light style.

CC-Link Supported

LHE-C3 / LE-C3 / WEP-C3

CC-Link

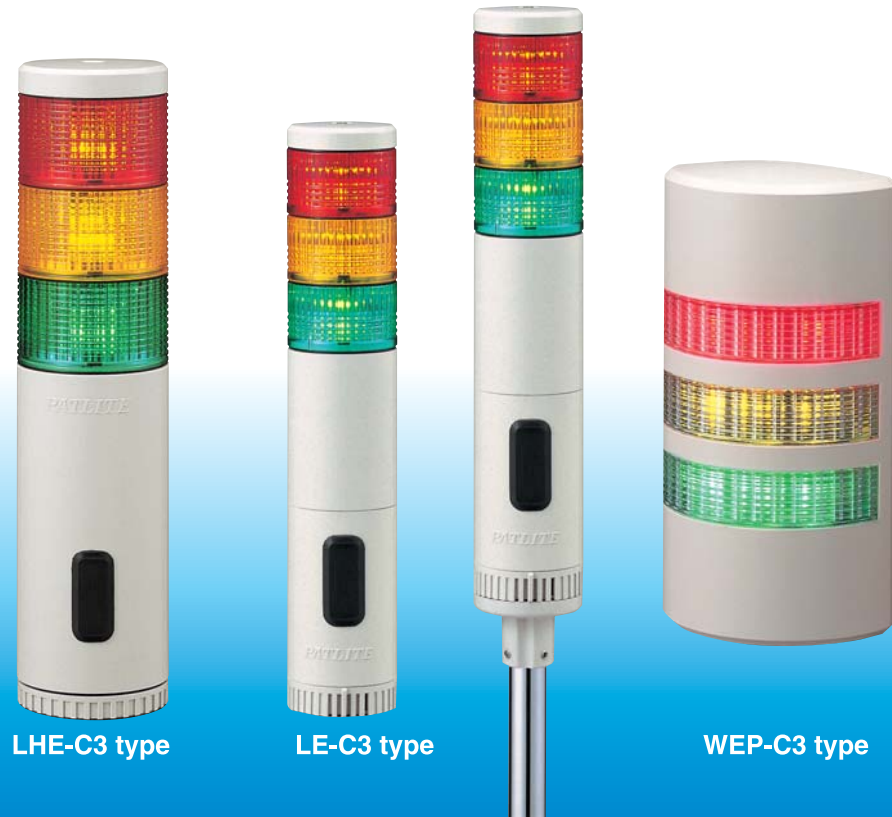
LED



90dB at 1m
(LE type: 85dB at 1m)

Electronic Sound 2
(WEP type: 1 sound)

IP23



LHE-C3 type

LE-C3 type

WEP-C3 type

CC-Link supported Signal Tower for Open-field Network

- Single Cable: Regulates electrical power and control signals.
- Easy Connection: Direct connection to a linked CC-Link interface with CC-Link cable, without I/O terminals, up to 64 units.
- Required Device: CC-Link-type controller (i.e. CC-Link master).
- Data Storage: Addresses set by dip switch.
- Lighting Pattern: Continuous only, no flashing.
- B type: Built-in alarm; LHE: 90dB at 1m (adjustable), LE: 85dB at 1m (adjustable), WEP: 90dB at 1m.
- Interchangeable modules*: No re-wiring even after installation, except for WEP type.

*Refer to the standard non-field bus model for details.

ø70 IP23

LHE-C3
LHE-C3B

- Sound Pattern: Intermittent tone, up to 90dB at 1m.
- 2 Selections: 1) fast beep; 2) slow beep
- Installation: Upright and indoors only.

ø50 IP23

Direct Mount
LE-C3W
LE-C3BW

Pole Mount
LE-C3P
LE-C3BP

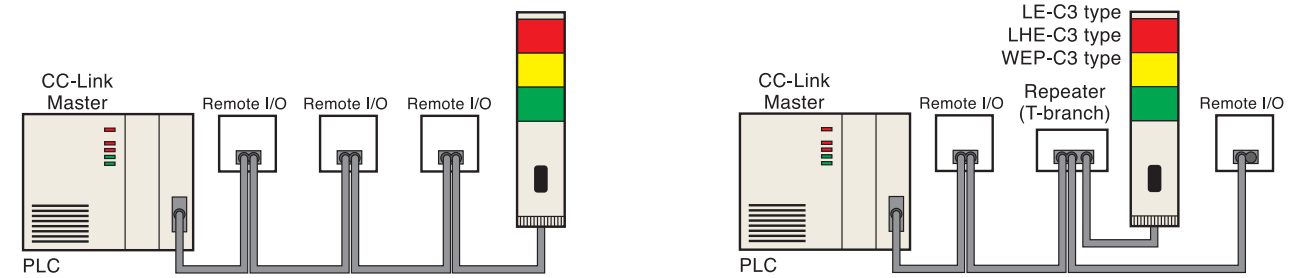
- Original Dual Reflection System: For enhanced light diffusion, creating bright distinctive illumination while saving energy (Patent Pending).
- Sound Pattern: Intermittent tone, up to 85dB at 1m.
- 2 Selections: 1) fast beep; 2) slow beep
- Installation: Indoors and upright only.
- Options Available: Direct or pole mount.

Profile 37.5mm

WEP-C3
WEP-C3B

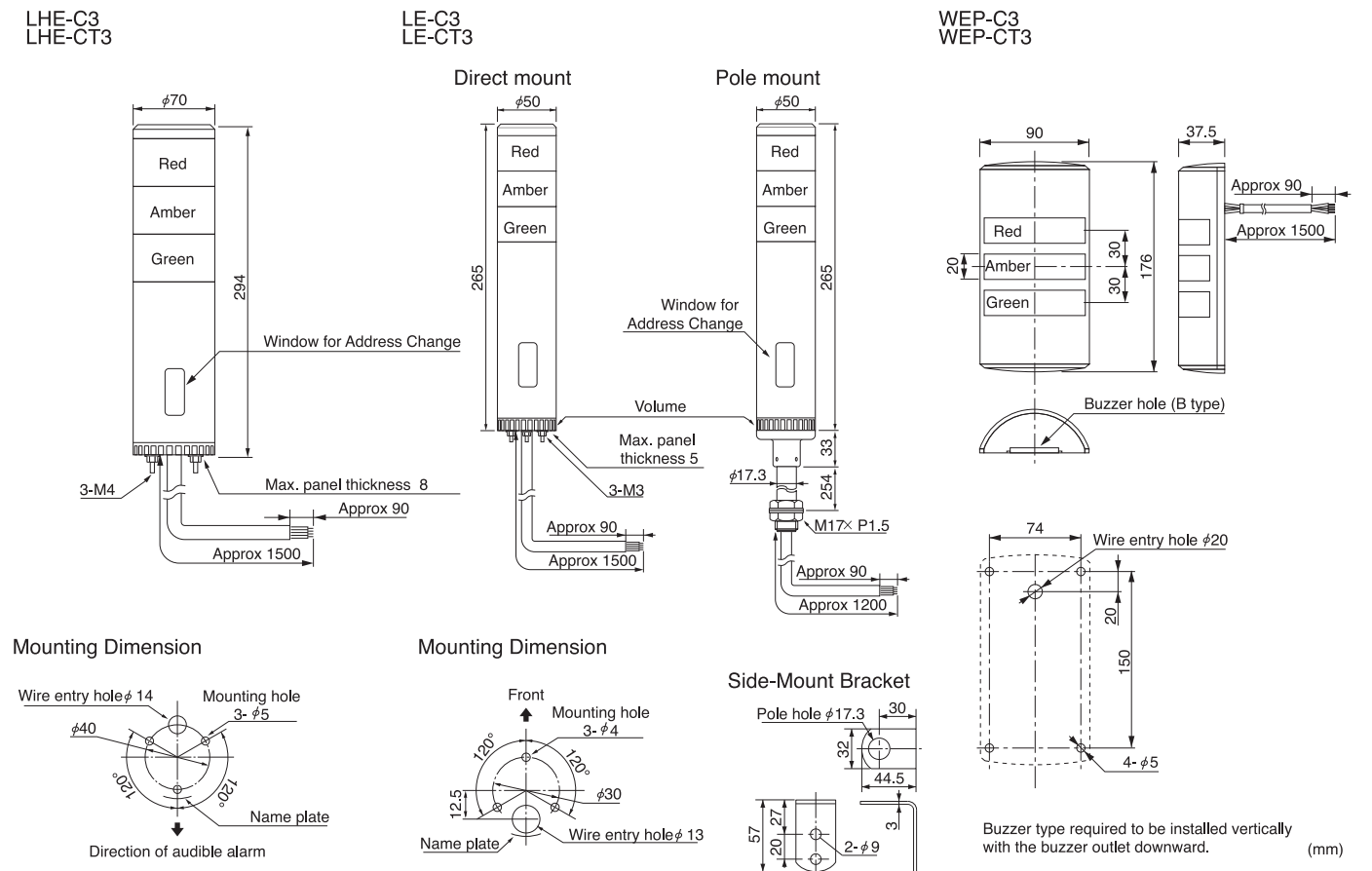
- Clear Vertical Cut Lens: For enhanced illumination over a wide perspective.
- Sound Pattern: Continuous up to 90dB at 1m.
- Installation: Indoors only, vertical or horizontal, either direction except for alarm (B) type: alarm exit must face downward.

Application Example



CC-Link stack light without terminating resistor can be branched using a terminal block in case a repeater is not used.

Dimensions



C3: Without terminal resistor
CT3: Built-in terminal resistor

Wire Color	Signal
BLUE	DA
WHITE	DB
YELLOW	DG
(NONE)	SLD

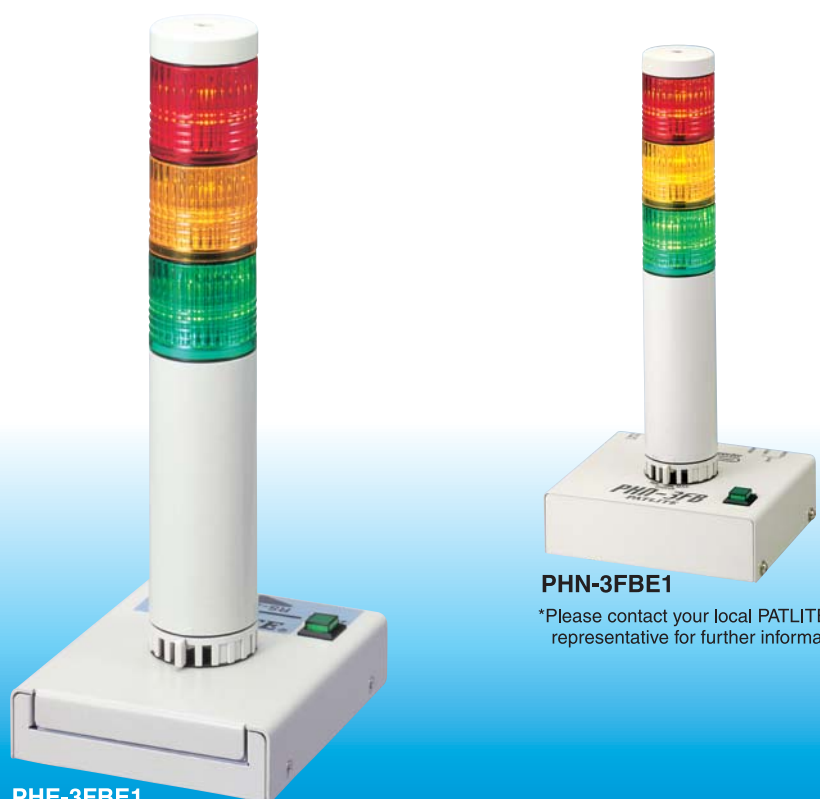
LHE-C3 / LE-C3 / WEP-C3 Type

Light Style	Model	Audible Alarm	Signal Line	Current Consumption		
				CC-Link PCB (Max.)	LED Unit (Max.)	Audible alarm (Max.)
3 Lights (Red, Amber, Green)	LHE-C(T)3	N/A	DA, DB, DG, SLD	50mA	50mA (Red, Amber) 40mA (Green)	—
	LHE-C(T)3B	available			—	40mA
	LE-C(T)3W/LE-C(T)3P	N/A			—	—
	LE-C(T)3BW/LE-C(T)3BP	available			50mA (Red, Amber) 40mA (Green)	40mA
	WEP-C(T)3	N/A			—	—
	WEP-C(T)3B	available		30mA (Red, Amber) 25mA (Green)	40mA	

Patlite's standard signal tower for field bus application is the 3-light style.

PHE-3FBE1/PHN-3FBE1

RS-232C / PC Controlled Signal Tower



RS232C

85dB at 1m

2 Sound Patterns

φ40

PHE-3FBE1

This product requires the knowledge to program the ASCII command to output through RS-232C port.

PHN-3FBE1

*Please contact your local PATLITE representative for further information.

PHC-100A

Interface Converter

Contact Output 8 RS232C



This product requires the knowledge to program the ASCII command to output through RS-232C port.

Signal Tower can be controlled directly by PC through RS-232C.

Alarm is adjustable up to 85dB at 1m

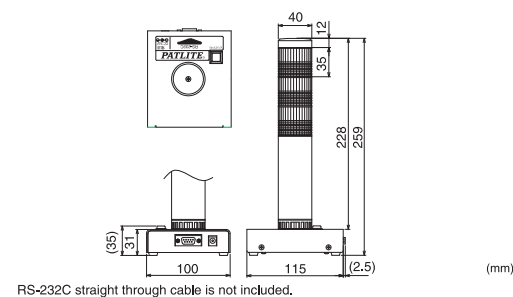
- High-volume alarms (two patterns) can be heard even in a noisy factory.

Bright LED signal tower

- PATLITE's original double reflection system with its exclusive hybrid prism-cut lens and 3 color LED modules create distinctive illumination that is bright and even.

Light and alarm functions can be turned off by pressing the reset switch on the base.

Dimensions



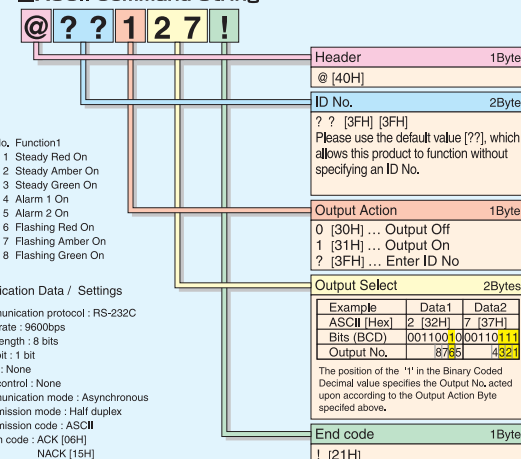
RS-232C straight through cable is not included.

Specifications

Model		PHE-3FBE1
Communication Interface		RS-232C (Based on EIA)
Communication Method		Half Duplex, Start-Stop, Asynchronous
Communication Speed		9,600bps
Communication Settings	Data Bit	8bit
	Stop Bit	1bit
	Parity Bit	None
	Flow Control	None
	I/O Port	D-Sub9P Male Connector
Signal Tower Section	Flashing Rate	60 times per minute
	Sound Level	Adjustable from 70 to 85dB (at 1m)
	Sound Alarm	2 alarms (Slow intermittent tone, fast intermittent tone)
Base Section	Dimensions	100x259x115mm
	Supply Power Source	AC Adaptor (Sold separately)
	Power Consumption	6.5W
	Operating Temperature Range	0~40°C
Humidity		20~80%RH (w/o dew condensation)

Control of PHE-3FBE1 / PHC-100A

ASCII Command String

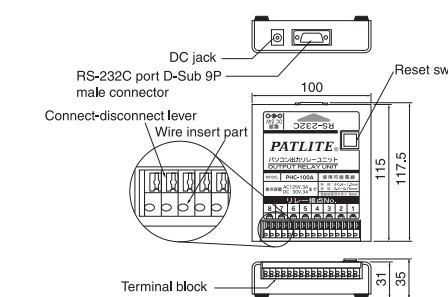


• The above example shows how to turn on the following output numbers : 6, 3, 2, 1

The PHC-100A Interface Converter can be connected to the RS-232C port on your programmed PC to control most PATLITE products, both visual and audible.

- 16 terminals provide 8 isolated non-voltage contact outputs.
- Reset pushbutton provided to reset all outputs to the off state.

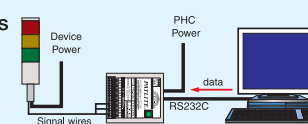
Dimensions



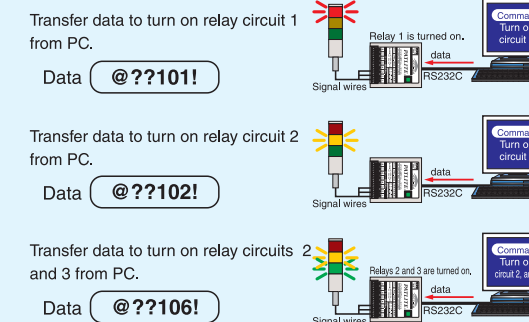
Specifications

Model		PHC-100A
Communication Interface		RS-232C (Based on EIA)
Communication Method		Half Duplex, Start-Stop, Asynchronous
Communication Speed		9,600bps
Communication Settings	Data Bit	8bit
	Stop Bit	1bit
	Parity Bit	none
	Flow Control	none
	I/O Port	D-Sub9P Male connector
Base Section Contacts	Contact Style	Non Voltage Contact
	Number of Contacts	8
	Output Contact Capacity	AC125V 3A/DC30V 3A
Applicable Wire	Connector	Screwless terminal
	Applicable Wire	Solid Wire 0.4~1.2mm (AWG26~18) Stranded Wire 0.3~0.75mm (AWG22~20)
Base Section	Dimensions	100(W)x31(H)x115(D)mm
	Supply Power Source	AC adaptor (Sold separately)
	Power Consumption	4W
	Operating Temperature Range	0~40°C
Humidity		85%RH or less (w/o dew condensation)

Basic Connections



Application Examples



Explosion proof Products



EDLM / EDWM

Explosion-proof Signal Tower



ATEX & FM

CENELEC Standards



Testing Authority
NEC Article 505

LED



IP66

**NPN/PNP
Open collector***

*AC 120/230/90-250V types are NPN compatible only

- Standards : Compliance to ATEX and NEC standards.
- Connection : Easy wiring for parallel connection to another interlocking device through 2 lead-in ports.
- Terminal Block : Easy connection to the signal tower by opening the bottom cover.
- Body : Made of aluminum alloy.
- Light Source : Long life, maintenance-free LED.
- Mounting : Wall mount, Direct mount and horizontal mount.
- Conforms to the CE requirements (for FE type only).

Specifications (ATEX)

Type	EDLM-302FE	EDLM-312FE	EDLM-323FE	EDWM-502FE	EDWM-5M2FE
Rated Voltage	AC/DC 24V	AC 120V	AC 230V	AC/DC 24V	AC 90~250V
Signal Line Current (Per LED Module)		Red/Amber: 52.5mA Green: 20.0mA		Red: 22.6mA, Amber: 26.6mA, Green: 17.5mA Blue/White: 38.9mA	
Explosion Protection Ratings	Ⓔ II2G Ex d IIC T6 (Zone1,2)		Ⓔ II2D Ex tD A21 IP66 T80°C (Zone21, 22)		
Operating Temperature	-20°C~+50°C (no ice)				
Operating Humidity	45%~85%RH (Keep from dew condensation)				
Ambient Pressure	80~110kpa				
Lighting Pattern	Flashing (60±12 flashes per minute) / Continuous light				
IP	IP66				
Vibration Resistance	9.8m/s ²				
Mounting	Outdoor & Indoor Upright		Outdoor & Indoor Upright & Sideways		
Luminosity	Red: 350mcd, Amber: 580mcd Green: 1300mcd		Red/Green/White: 1000mcd Amber: 700mcd, Blue: 300mcd		
Mass (Main body)	4.3kg				
Material	Upper & Lower Case : Aluminum alloy(Housing finish: Melamine baking finish) Glass Case : Borosilicate glass Fitting Bracket : Stainless steel (SUS 316) Cable Gland : Brass				

Specifications (NEC)

Type	EDLM-302FA	EDLM-312FA	EDLM-323FA	EDWM-502FA	EDWM-5M2FA
Rated Voltage	AC/DC 24V	AC 120V	AC 230V	AC/DC 24V	AC 90~250V
Signal Line Current (Per LED Module)		Red/Amber: 52.5mA Green: 20.0mA		Red: 22.6mA, Amber: 26.6mA, Green: 17.5mA Blue/White: 38.9mA	
Explosion Protection Ratings	Class I, Zone 1 AEx d IIC T6				
Operating Temperature	-25°C~+50°C (no ice)				
Operating Humidity	45%~85%RH (Keep from dew condensation)				
Ambient Pressure	80~110kpa				
Lighting Pattern	Flashing (60±12 flashes per minute) / Continuous light				
IP	IP66				
Vibration Resistance	9.8m/s ²				
Mounting	Outdoor & Indoor Upright		Outdoor & Indoor Upright & Sideways		
Luminosity	Red: 350mcd, Amber: 580mcd Green: 1300mcd		Red/Green/White: 1000mcd Amber: 700mcd, Blue: 300mcd		
Mass (Main body)	4.3kg				
Material	Upper & Lower Case : Aluminum alloy(Housing finish: Melamine baking finish) Glass Case : Borosilicate glass Fitting Bracket : Stainless steel (SUS 316)				

EDLM & EDWM are covered by the specifications shown in the shaded areas below

Common in Europe

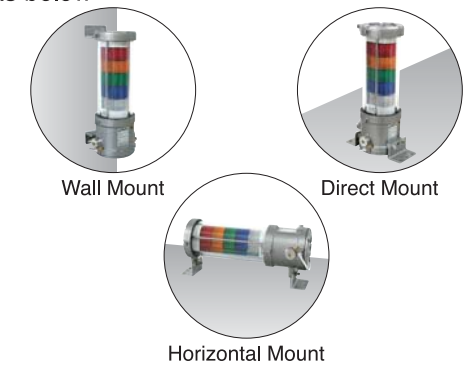
• ATEX directive is CENELEC standard.

Classification	Standard	PATLITE Models	Present Continuously	Present Intermittently	Present Abnormally
ATEX, IEC/EU Directive 94/9/EC	IEC 60079-10 EN 60079-10	EDLM, EDWM	Zone 0	Zone 1	Zone 2

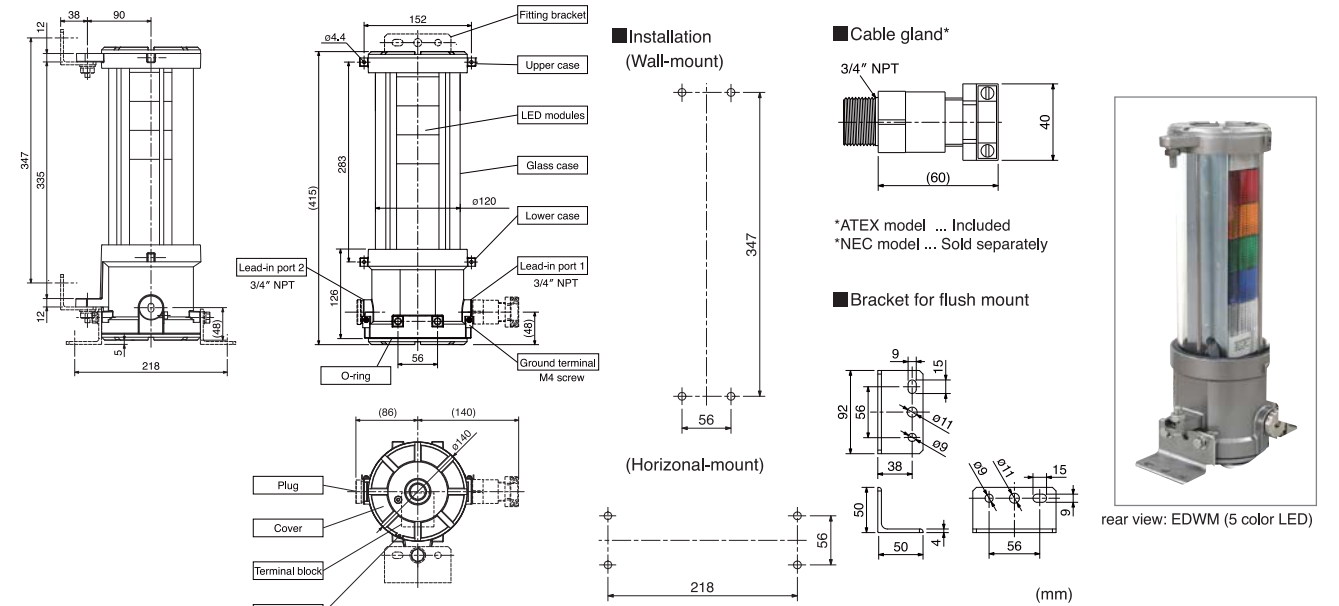
Common in the USA

• NEC standard is National Electrical Code.

Classification	Standard	PATLITE Models	Present Continuously	Present Intermittently	Present Abnormally
NEC Article 505	ANSI/NFPA 71	EDLM, EDWM	Zone 0	Zone 1	Zone 2
NEC Article 500	ANSI/NFPA 70	—	Division 1		Division 2

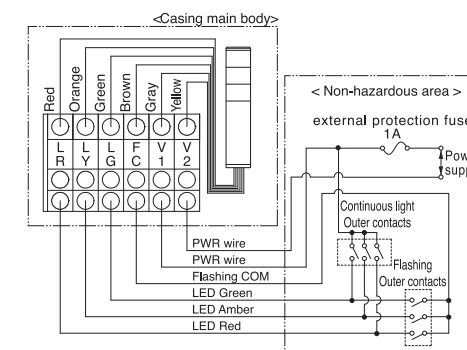


Dimensions (EDLM, EDWM)

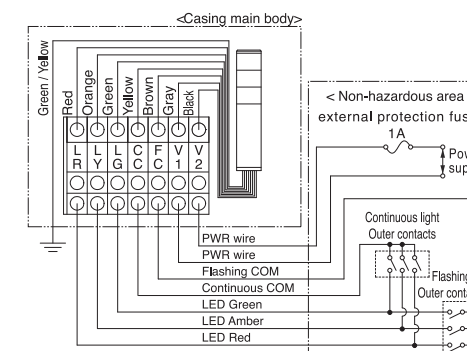


Wiring Diagram (EDLM (3 color LED))

■ EDLM-302FE/FA

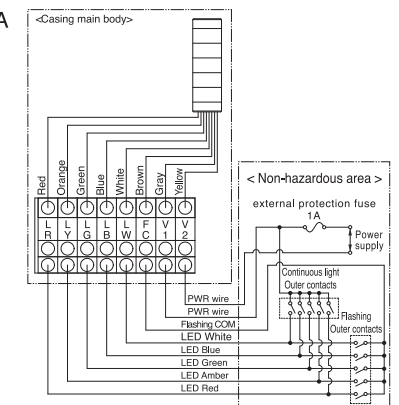


■ EDLM-312FE/FA
EDLM-323FE/FA

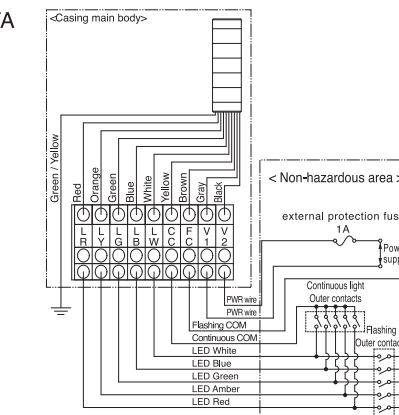


Wiring Diagram (EDWM (5 color LED))

■ EDWM-502FE/FA



■ EDWM-5M2FE/FA



RES-A

Explosion-Proof
Revolving Warning Light



Bulb



∅224

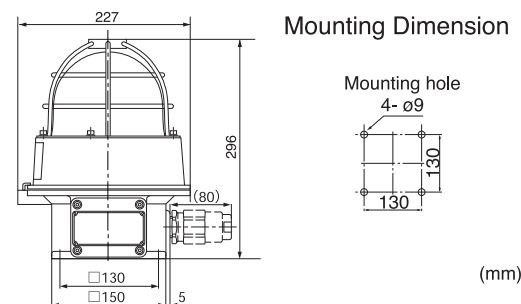
IP65

Explosion-proof

Compact explosion-proof revolving warning light with parabolic reflector.

- Integral Rotating Parabolic Reflector: For enhanced visibility from a distance.
- Installation: Indoors—upright, inverted, sideways; Outdoors—upright only.
- Main Body: Aluminum alloy die-cast with silver color baked finish.
- Dome: Acrylic resin covered with clear hard-glass, and metal guard.
- Product Standards: IEC Standards (IEC ExdIIB + H₂T6) Zone1, 2 compliant.
- Approved by: TIIS.
- Available Colors: Red, Amber, Green, Blue.

Dimensions



RES-A Type

Model	Rated Voltage	Current	Rotations per Minute	Bulb	No.	Mass
◎RES-12A	12V DC	0.9A	170	12V10W	9	6.5kg
◎RES-24A	24V DC	0.5A		24V10W	10	
◎RES-48A	48V DC	0.3A	150	48V10W	11	
RES-100A	100~110V AC	0.1A	170	12V5W	12	
◎RES-120A	115~120V AC					
RES-220A	200~220V AC	0.05A				
◎RES-240A	230~240V AC					

Bulb: G18 BA15S

◎: Special order

Signal Tower



ME-A / MES-A

Signal Tower



LED



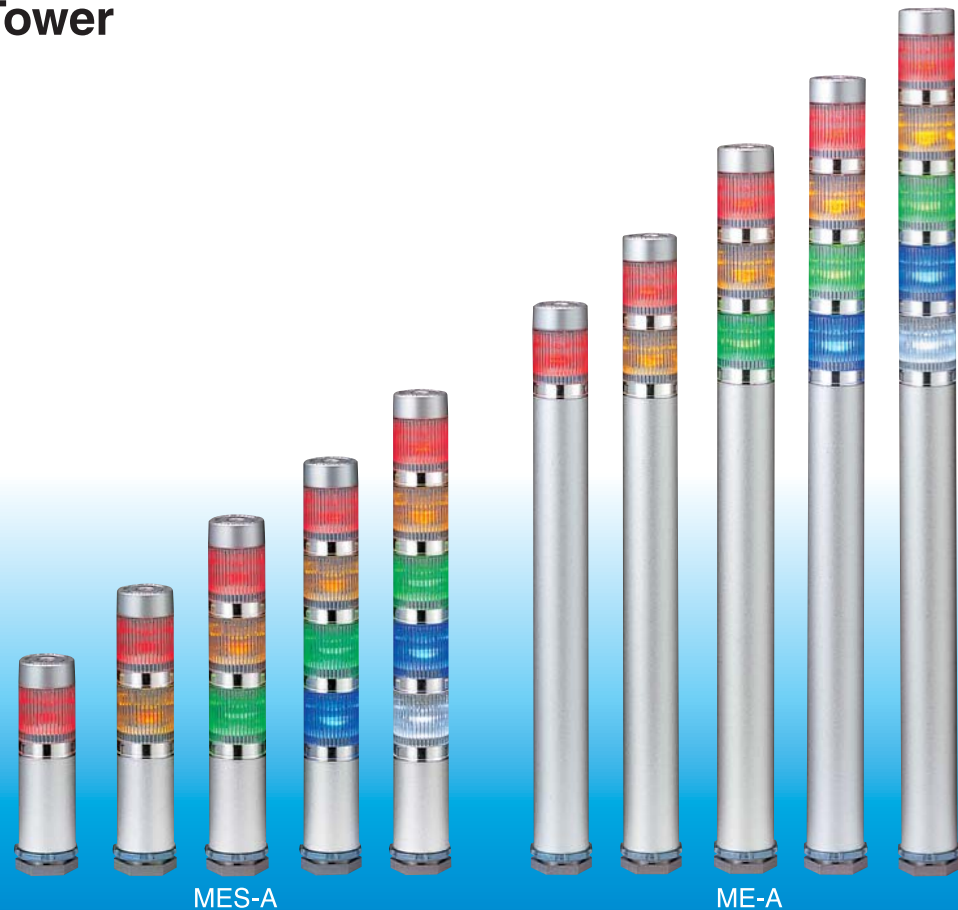
Cabtyre
(Special order)



ø25

IP42

NPN
Open collector



Super slim 25mm Signal Tower with aluminum body, ideal for small devices.

- PATLITE's Exclusive Hybrid Prism-Cut Lens: For enhanced visibility from any direction and distance.
- Enhanced Illumination: Special high intensity illumination design.
- Installation: Direct mount with a single hole.
- Interchangeable Modules: No re-wiring even after installation.
- Main Body: Corrosion resistant anodized aluminum for retaining its external beauty.
- Lens: Superior impact and heat resistant polycarbonate resin for superior durability and light transmission.
- Available Colors: Red, Amber, Green, Blue, Clear/White.
- Body Length: MES 40mm, ME 200mm.
- Conforms to the CE requirements.
- UL Recognized Component (File No. E215660)

Available by Special Order

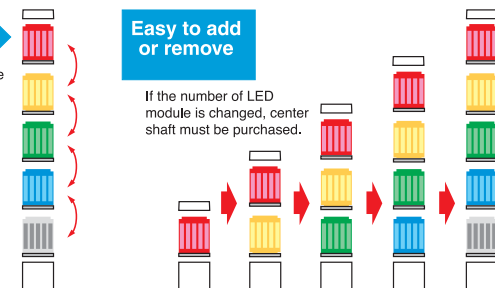
- Cabtyre Cable: Versatile and flexible 3m cable.
- Body Length: MEL 500mm.
- IP54 (for MES / ME / MEL).
- PNP compatible: ME 24V type.

Interchangeable LED modules

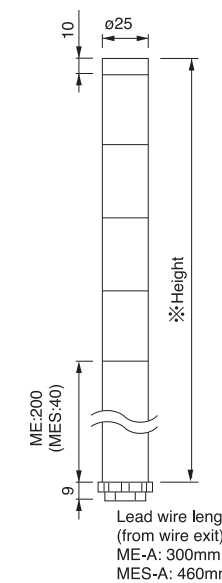
- Changeable color sequence: Easy to add/remove up to 5 colored modules even after installation.
- Note: LED modules of the same color will light up simultaneously.

The wiring remains the same.

Each color of LED module corresponds to the lead wire color.



Dimensions

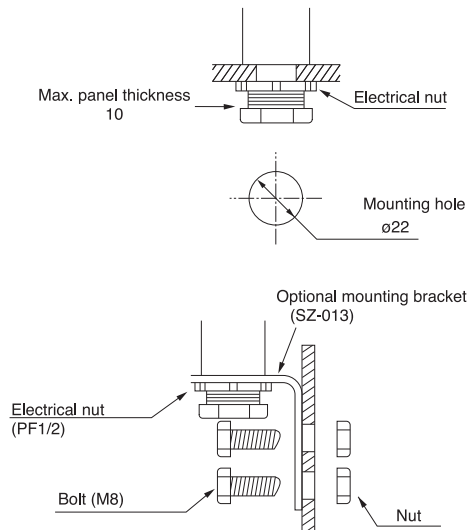


ME-A type

※ Height (mm)
1 Light: 240
2 Lights: 270
3 Lights: 300
4 Lights: 330
5 Lights: 360

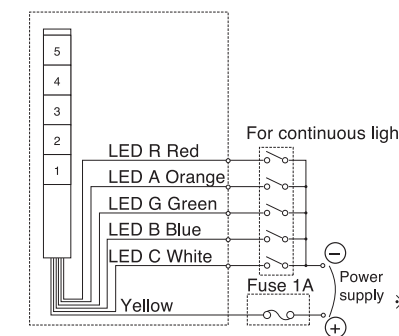
MES-A type

※ Height (mm)
1 Light: 80
2 Lights: 110
3 Lights: 140
4 Lights: 170
5 Lights: 200



(mm)

Wiring Diagram



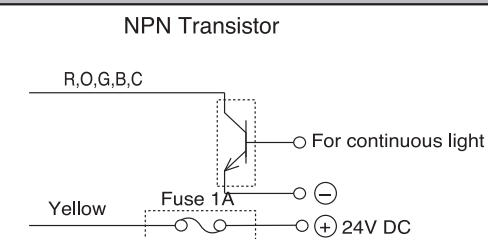
Signal line voltage and current per LED module

Rated Voltage	Signal Line Voltage	ME-A/MES-A	
		Signal Line Current	Color of LED Unit / Color of Lead Wire
24V DC	24V DC	R, A: 25mA G, B, C: 20mA	Red / Red
			Amber / Orange
			Green / Green
			Blue / Blue
			Clear / White

※ ME/MES: positive(+) on yellow.

Note: See page 169 for wiring diagram

24V DC: NPN Transistor



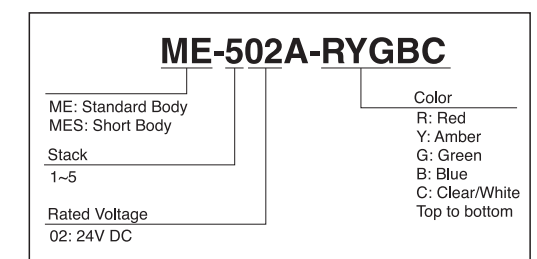
Transistor Capacity

Model	ME/MES Transistor (NPN)
Current Capacity	Ic ≥ 0.1A
Withstand Voltage	Vc ≥ 35V
Current Leakage	I< 0.1mA

ME-A / MES-A Type

Light Style	Model	Rated Voltage	Power Consumption
1 Light	ME/MES-102A-R	24V DC	0.6W
	ME/MES-102A-Y		0.6W
	ME/MES-102A-G		0.5W
	ME/MES-102A-B		0.5W
	ME/MES-102A-C		0.5W
2 Lights	ME/MES-202A-RY	24V DC	1.2W
	ME/MES-202A-RG		1.1W
	ME/MES-202A-RB		1.1W
	ME/MES-202A-RC		1.1W
	ME/MES-202A-RYB		1.1W
3 Lights	ME/MES-302A-RYG	24V DC	1.7W
	ME/MES-302A-RYB		1.7W
	ME/MES-302A-RYC		1.7W
4 Lights	ME/MES-402A-RYGB	24V DC	2.3W
	ME/MES-402A-RYGC		2.3W
5 Lights	ME/MES-502A-RYGBGC	24V DC	2.8W

How to Order



MP / MPS

Signal Tower



LED



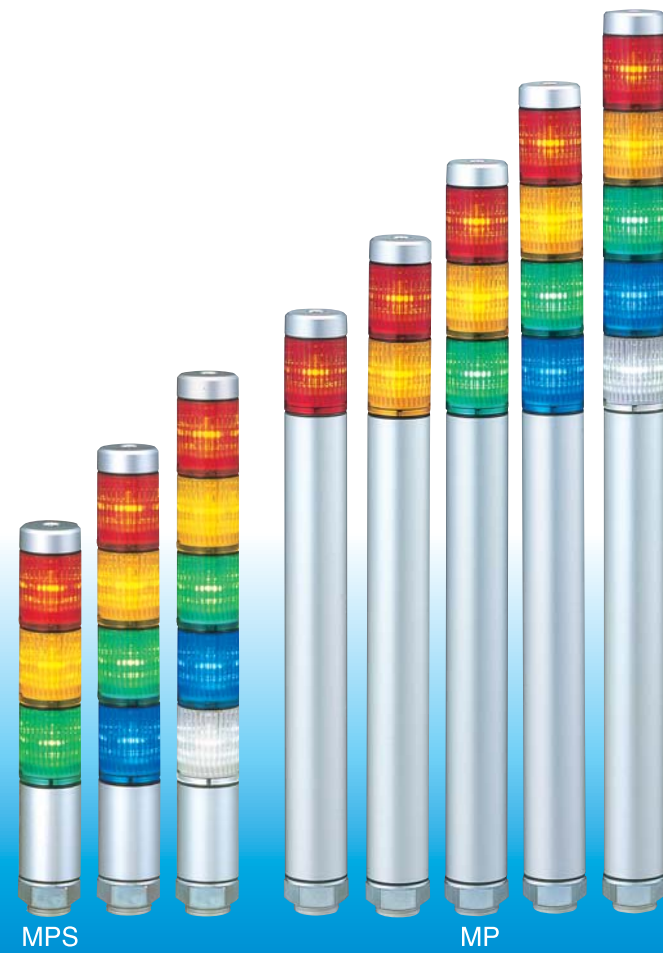
Cabtyre
(Special order)



∅30

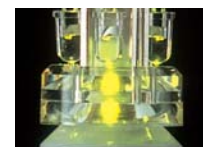
IP65

NPN/PNP
Open collector



Patented reflection system increases visibility.

Super slim 30mm silver body Signal Tower ideal for small devices.



High intensity LED



Good visibility from any direction

- PATLITE's Exclusive Hybrid Prism Cut Lens: For enhanced visibility from any direction and distance.
- Double Insulation: For enhanced durability and safety in the work environment.
- Installation: Direct mount with a single hole.
- Interchangeable LED module: No re-wiring even after installation.
- Main Body: Superior impact and heat resistant ABS resin.
- Lens: Superior weather resistant and light translucent AS resin.
- Available Colors: Red, Amber, Green, Blue, Clear/White.
- Conforms to the CE requirements.
- UL Recognized Component (File No. E215660)

Available by Special Order

- Cabtyre Cable: Versatile and flexible 3m cable.
- All Clear Lens: Distinctive color recognition when operated (B0738 type).

- Available Colors: Red, Amber, Green, Blue, Clear/White.

Interchangeable LED modules

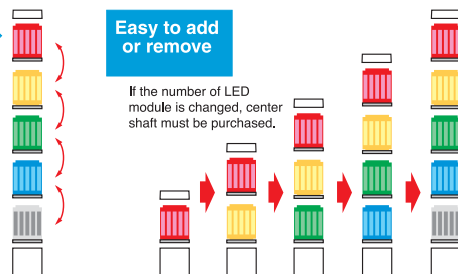
- Changeable color sequence: Easy to add/remove up to 5 colored modules even after installation.
- Note: LED modules of the same color will light up simultaneously.

The wiring remains the same.

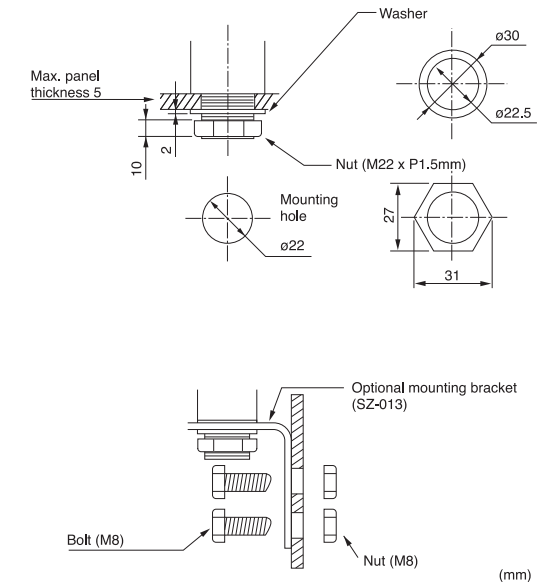
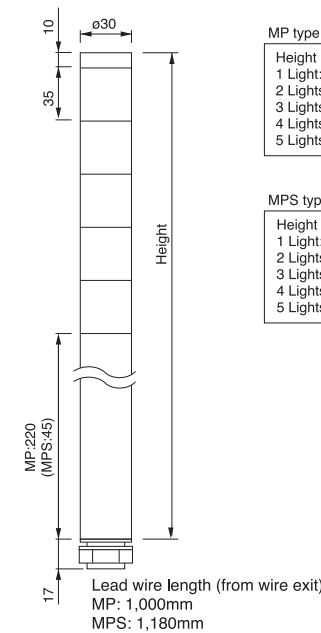
Each color of LED module corresponds to the lead wire color.

Easy to add or remove

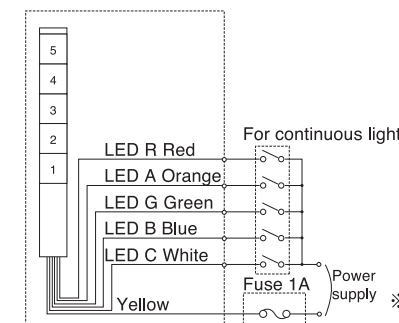
If the number of LED module is changed, center shaft must be purchased.



Dimensions



Wiring Diagram

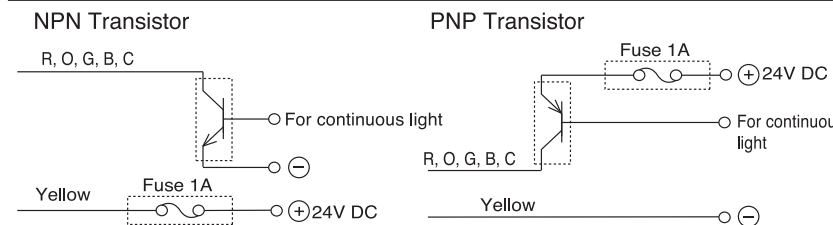


Signal line voltage and current per LED module

Rated Voltage	Signal Line Voltage	MP/MPS Signal Line Current	Color of LED Unit	Color of Lead Wire
24V AC/DC	24V DC	R,A: 30mA G,B,C: 25mA	Red	Red
			Amber	Orange
			Green	Green
			Blue	Blue
			Clear	White

Note: See page 169 for wiring diagram

24V DC: NPN / PNP Transistor



Transistor Capacity

Model	MP/MPS Transistor (NPN/PNP)
Current Capacity	I _c ≥ 50mA
Withstanding Voltage	V _c ≥ 35V
Current Leakage	I _l < 0.1mA

MP / MPS Type

Light Style	Model	Rated Voltage	Power Consumption
1 Light	MP/MPS-102	24V AC/DC	0.7W
2 Lights	MP/MPS-202	24V AC/DC	1.4W
3 Lights	MP/MPS-302	24V AC/DC	2.0W
4 Lights	MP/MPS-402	24V AC/DC	2.6W
5 Lights	MP/MPS-502	24V AC/DC	3.2W

How to Order

MP-502-RYGBC

MP: Standard Body
MPS: Short Body
Stack
1~5
Rated Voltage
02: 24V AC/DC

Color
R: Red
Y: Amber
G: Green
B: Blue
C: Clear/White
Top to bottom

Clear lens type: model no. with B0438

LCE / LCE-U

Signal Tower



LED



Cabtire
(LCE-U type only)



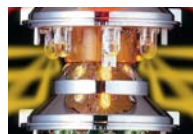
85dB at 1m
(FB type)

Electronic Sound 2
(FB type)

∅40

IP65
(LCE-FB type IP54)

NPN/PNP
Open collector



Reflection system



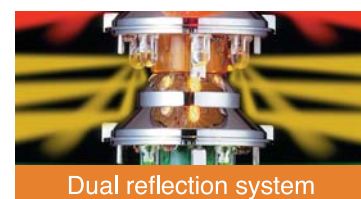
High visibility from any angle



Adjustable volume Max. 85dB/m

Low-priced, high quality LED Signal Tower featuring low maintenance and energy savings.

- PATLITE's Exclusive Hybrid Prism Cut Lens: For enhanced visibility from any direction and distance.
- Original Dual Reflection System: For enhanced light diffusion, creating bright, distinctive illumination while saving energy (Patent Pending).
- Built-in Alarms (FB Type): 2 selectable sound patterns with adjustable volume up to 85dB at 1m.
- Installation: Direct or pole mount.
- Color-coordinated Wiring: Corresponds to the lens colors for quick wiring verification.
- Interchangeable LED Modules: No re-wiring even after installation.
- Main Body: ABS resin with superior resistance to impact and heat (U type has silver color and 3m cabtyre cable).
- Lens: Superior impact resistant and light translucent AS resin.
- NPN/PNP Compatible: For 24V DC type; M2 type compatible with NPN only.
- Available Colors: Red, Amber, Green, Blue, Clear/White.
- High visibility from any angle.
- Adjustable volume Max. 85dB at 1m
- Conforms to the CE requirements (for 24V type).
- UL Recognized Component (File No. E215660).



Dual reflection system

PATLITE's original dual reflection system with its exclusive hybrid prism-cut lens and 5 color LED modules create bright, distinctive, even illumination.

Interchangeable LED modules

- Changeable color sequence: Easy to add / remove up to 5 colored modules even after installation.
- Note: LED modules of the same color will light up simultaneously.

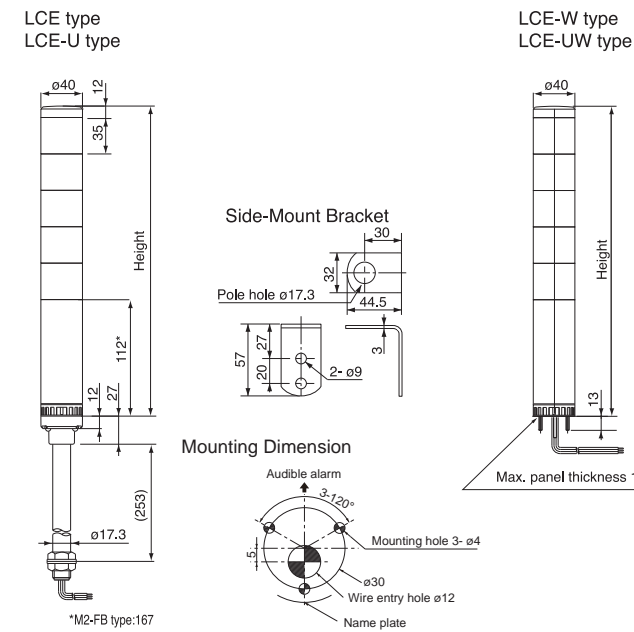
Easy to add and remove

If the number of LED module is changed, center shaft must be purchased.

The wiring remains the same

Each color of LED module corresponds to the lead wire color.

Dimensions



LCE type LCE-U type

Height (mm)
1 Light: 158
2 Lights: 193
3 Lights: 228
4 Lights: 263
5 Lights: 298

LCE-M2FB type

Height (mm)
1 Light: 213
2 Lights: 248
3 Lights: 283
4 Lights: 318
5 Lights: 353

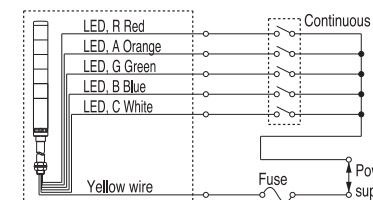
(mm)



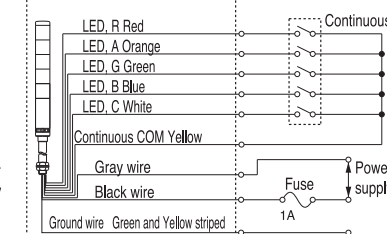
Wiring Diagram

Continuous Only

AC/DC 24V



AC 90~250V



Signal line voltage and current per LED module

Model	Voltage Type	Signal Line Voltage	LED		Alarm	
			Signal Line Current R,Y	G,B,C	Signal Line Current	Inrush Current
LCE/LCE-U	24V AC/DC	24V AC/DC	30mA	25mA	40mA	250mA
LCE-M2	90~250V AC	24V DC	30mA	25mA	40mA	250mA

Lead wire color correspondence table

Color of LED Unit	Color of Lead Wire
Red	Red
Amber	Orange
Green	Green
Blue	Blue
Clear/White	White

Alarm	Color of Lead Wire
Alarm1	Purple
Alarm2	Skyblue

Fuse for outer contact protection

Voltage	Fuse
All voltage types	1A

Note: See page 170 for wiring diagram

LCE / LCE-U Type

Light Style	Model	Rated Voltage	Power Consumption
1 Light	LCE-102(U)	24V AC/DC	1.7W
	LCE-1M2	90~250V AC	1.9W
2 Lights	LCE-202(U)	24V AC/DC	2.4W
	LCE-2M2	90~250V AC	2.6W
3 Lights	LCE-302(U)	24V AC/DC	3.0W
	LCE-3M2	90~250V AC	3.2W
4 Lights	LCE-402(U)	24V AC/DC	3.6W
	LCE-4M2	90~250V AC	3.8W
5 Lights	LCE-502(U)	24V AC/DC	4.2W
	LCE-5M2	90~250V AC	4.4W

FB type: approx. 60 flashes per minute.

How to Order (LCE Type)

LCE-502UFBW-RYGBC-Z

Stacks 1~5	Color of LED	Color of Lens
Rated Voltage	R: Red	Blank: Colored lens
02: 24V AC/DC	Y: Amber	Z: Clear lens
M2: 90~250V AC	G: Green	
Body Color	B: Blue	
Blank: Ivory white	C: Clear/White	
U: Silver Color	Top to bottom	
Type	Mount	
Blank: Continuous light	Blank: Pole Mount (with SZ-012)	
FB: Continuous or flashing light with audible alarm	K: Pole Mount (with SZ-021)	
	W: Direct Mount	

LCS / LCS-U

Signal Tower



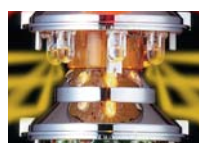
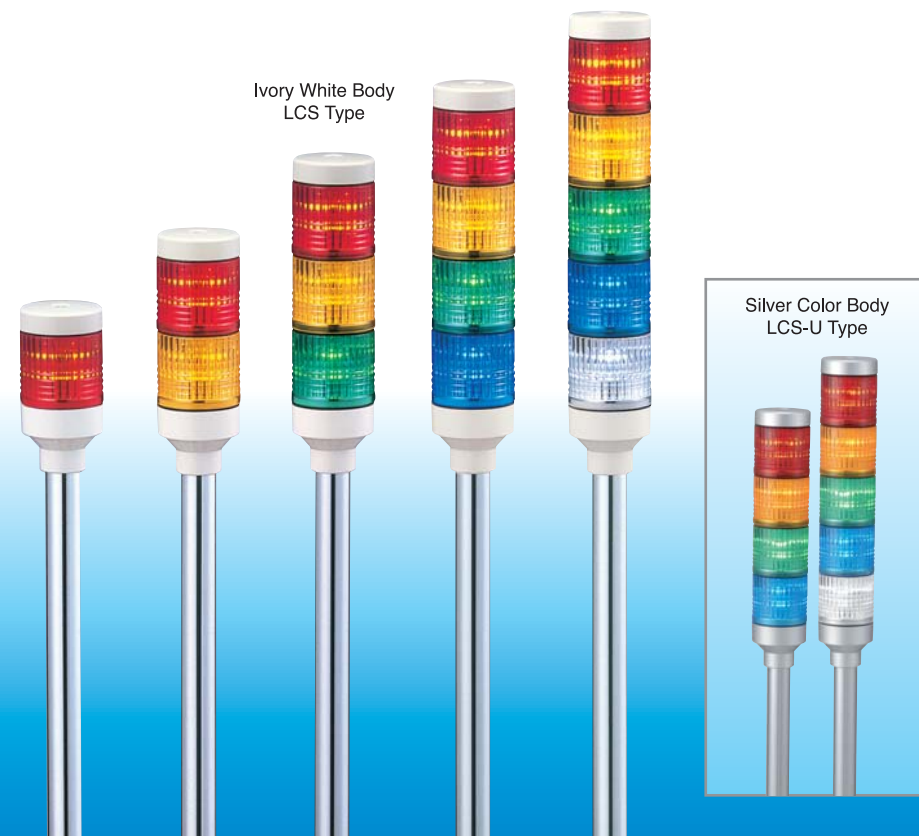
LED



∅40

IP54

NPN/PNP
Open collector



Reflection system



High visibility from any angle

Versatile LED Signal Tower featuring high quality and low price.

- PATLITE's Exclusive Hybrid Prism Cut Lens: For enhanced visibility from any direction and distance.
- Original Dual Reflection System: For enhanced light diffusion, creating bright, distinctive illumination while saving energy (Patent Pending).
- Installation: Pole mount only.
- Color coordinated Wiring: Corresponds to the lens colors for quick wiring verification.
- Interchangeable LED Modules: No re-wiring even after installation.
- Main Body: ABS resin with superior resistance to impact and heat.
- Lens: Superior impact resistant and light translucent AS resin.
- Available Colors: Red, Amber, Green, Blue, Clear/White.
- Conforms to the CE requirements.
- UL Recognized Component (File No. E215660).

Available by Special Order

- Silver Color Body Type (LCS-U).
- Cabtyre Cable: Versatile and flexible 3m cable.
- Clear Lens Module: Distinctive color recognition when operated (B0738 type).

Interchangeable LED modules

- Changeable color sequence: Easy to add/ remove up to 5 colored modules even after installation.
- Note: LED modules of the same color within a signal tower will light up simultaneously.

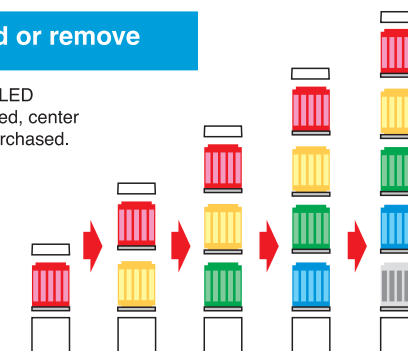


The wiring remains the same.

Each color of LED module corresponds to the lead wire color.

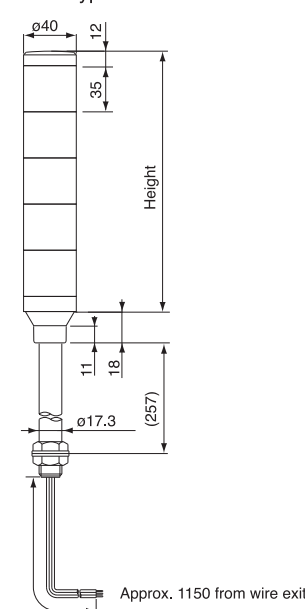
Easy to add or remove

If the number of LED module is changed, center shaft must be purchased.

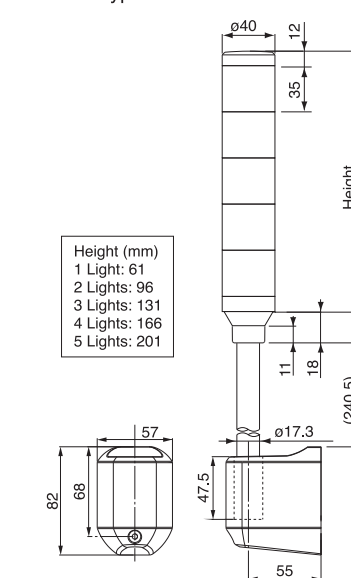


Dimensions

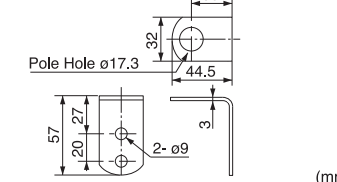
LCS Type



LCS-K Type



Side-Mount Bracket



Clear lens style tower is also available.



Please add -Z at the end of the part number when ordering the clear lens type tower.



Wiring Diagram

Note: See page 170 for wiring diagram

LCS Type

Light Style	Model	Rated Voltage	Power Consumption	Mass	
				LCS	LCS-K
1 Light	LCS-102	24V AC/DC	0.7W	0.42kg	0.54kg
2 Lights	LCS-202	24V AC/DC	1.4W	0.45kg	0.57kg
3 Lights	LCS-302	24V AC/DC	2.0W	0.48kg	0.60kg
4 Lights	LCS-402	24V AC/DC	2.6W	0.51kg	—
5 Lights	LCS-502	24V AC/DC	3.2W	0.54kg	—

How to Order (LCS Type)

LCS-502K-RYGBC-Z		
Stacks 1-5	Color of LED	Color of Lens
	R: Red Y: Amber G: Green B: Blue C: Clear/White Top to bottom	Blank: Colored lens Z: Clear lens
Rated Voltage 02: 24V AC/DC	Mount	
	Blank: Pole Mount (with SZ-012) K: Pole Mount (with SZ-021)	

LE/LES

Signal Tower



LED



85dB at 1m
(LE-FB type)

ø50

IP54
(Pole-mount type IP23)

NPN/PNP
Open collector



Versatile, cost and energy efficient LED Signal Tower for every need.

- PATLITE's Exclusive Hybrid Prism Cut Lens: For enhanced visibility from any direction and distance.
- Original Dual Reflection System: For enhanced light diffusion, creating bright distinctive illumination while saving energy (Patent Pending).
- Built-in Alarms (FB Type): 2 selectable sound patterns with adjustable volume up to 85dB at 1m.
- Installation: Direct or pole mount
- Color-coordinated Wiring: Corresponds to the lens colors for quick wiring verification.
- Interchangeable LED Modules: No re-wiring even after installation for LE model. The LED module of LES-A cannot be added, removed or interchanged.
- Main Body: ABS resin with superior resistance to impact and heat.
- Lens: Superior impact resistant and light translucent AS resin.
- NPN/PNP Compatible: Except LE 100/220V AC, compatible with NPN only.
- Available Colors: Red, Amber, Green, Blue, Clear.
- Conforms to the CE requirements (for 12V, 24V type only).
- UL Recognized Component (File No. E215660) (for 12V,24V type only).

Available by Special Order

- LES 24V: IP65 for direct mount and IP54 for pole mount types.

Interchangeable LED modules

- Changeable color sequence: Easy to add / remove up to 5 colored modules even after installation.
- Note: LED modules of the same color will light up simultaneously.

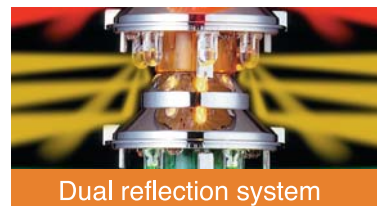
The wiring remains the same

Each color of LED module corresponds to the lead wire color.



Easy to add and remove

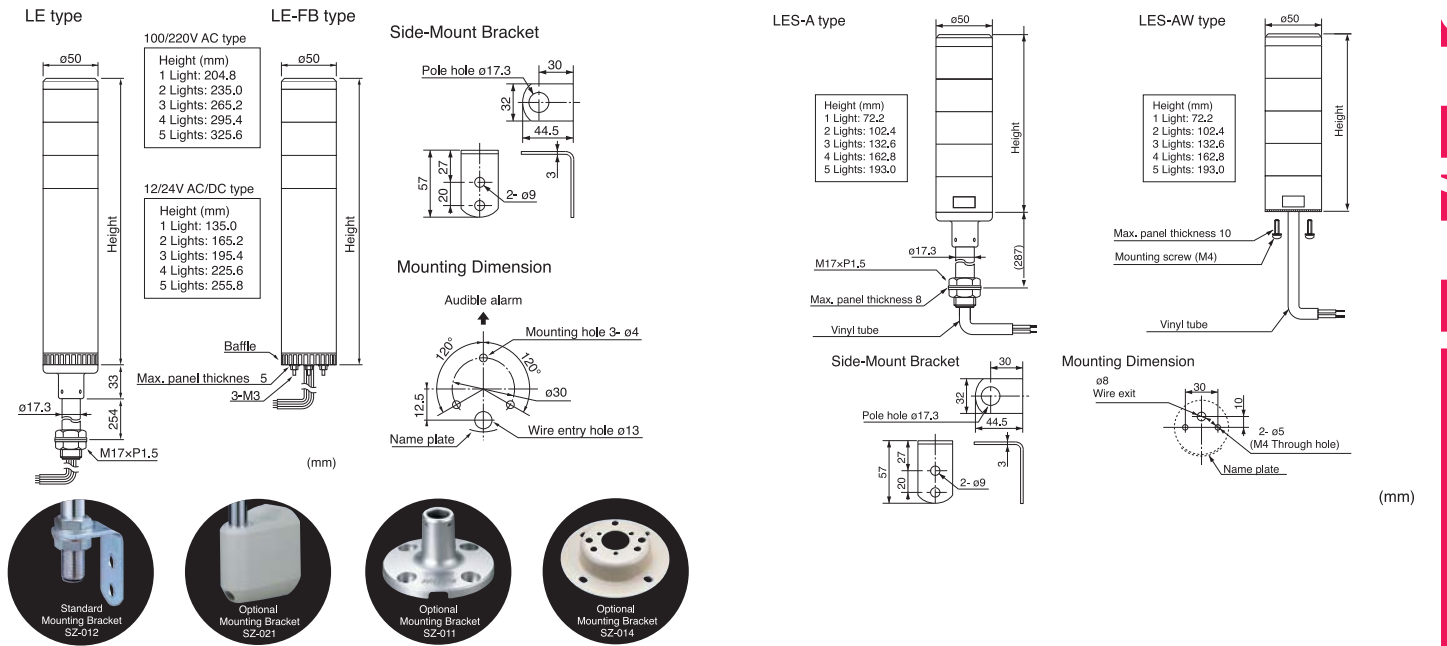
- If the number of LED module is changed, center shaft must be purchased.
- Note: The LED module of LES-A cannot be added, removed or interchanged.



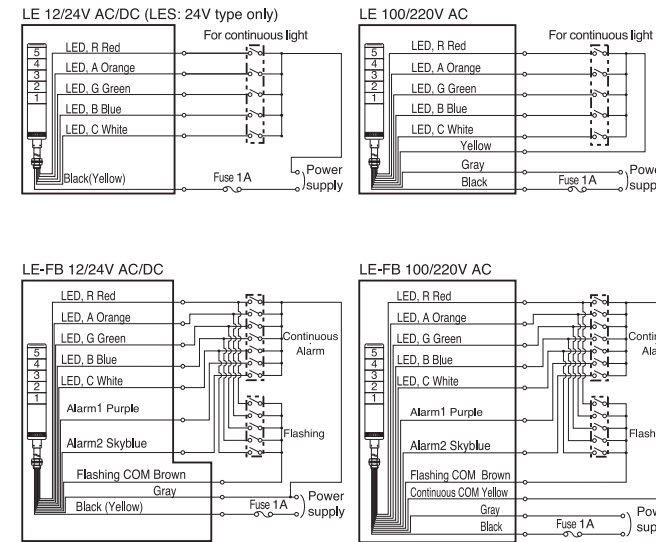
Dual reflection system

PATLITE's original double reflection system with its exclusive hybrid prism-cut lens and 5 color LED modules create distinctive illumination that is bright and even.

Dimensions



Wiring Diagram



Signal line voltage and current per LED module

Model	Rated Voltage	Signal Line Voltage	LED			Alarm
			R, A: 50mA	G, C: 40mA	B: 44mA	
LES/LE	12V AC/DC	12V AC/DC	R, A: 25mA	G, C: 20mA	B: 22mA	Signal Line Current 40mA
LE	100V, 220V AC	24V DC	R, A: 25mA	G, C: 20mA	B: 22mA	Inrush Current 150mA

Color Designator Chart *

Color of LED unit	Color of Lead wire
Red	Red
Amber	Orange
Green	Green
Blue	Blue
Clear/White	White

Alarm	Color of Lead wire
Alarm1	Purple
Alarm2	Skyblue

*Alarm wires do not exist for continuous only models.

*LE type: All 5 light wires are supplied even if all colors are not used.

Fuse for customer-supplied contact protection	
Voltage	Fuse
All voltage types	1A

Note: See page 171 for wiring diagram

LE Type

Light Style	Model	Rated Voltage	Power Consumption
1 Light	LE-101	12V AC/DC	1.1W
	LE-102	24V AC/DC	1.6W
	LE-110	100V AC	5.7W
2 Lights	LE-120	220V AC	5.7W
	LE-201	12V AC/DC	1.7W
	LE-202	24V AC/DC	2.2W
	LE-210	100V AC	6.7W
	LE-220	220V AC	6.7W
	LE-301	12V AC/DC	2.2W
3 Lights	LE-302	24V AC/DC	2.7W
	LE-310	100V AC	7.5W
	LE-320	220V AC	7.5W
4 Lights	LE-401	12V AC/DC	2.7W
	LE-402	24V AC/DC	3.2W
	LE-410	100V AC	8.3W
	LE-420	220V AC	8.3W
	LE-501	12V AC/DC	3.2W
	LE-502	24V AC/DC	3.7W
5 Lights	LE-510	100V AC	9.1W
	LE-520	220V AC	9.1W

FB type approx. 60 flashes per minute.

LES Type

Light Style	Model	Rated Voltage	Power Consumption
1 Light	LES-102A	24V AC/DC	0.6W
2 Lights	LES-202A	24V AC/DC	1.2W
3 Lights	LES-302A	24V AC/DC	1.7W
4 Lights	LES-402A	24V AC/DC	2.2W
5 Lights	LES-502A	24V AC/DC	2.7W

How to Order

LE-502FBW-RYGBC

Stacks	Color
1-5	R: Red Y: Amber G: Green B: Blue C: Clear/White Top to bottom
Rated Voltage	
01: 12V AC/DC	
02: 24V AC/DC	
10: 100V AC	
20: 220V AC	
Type	
Blank: Continuous light	
FB: Continuous or flashing light with audible alarm	
Mount	
P: Pole Mount (with SZ-012)	
W: Direct Mount	

LES-502AW-RYGBC

Stacks	Color
1-5	R: Red Y: Amber G: Green B: Blue C: Clear/White Top to bottom
Rated Voltage	
02: 24V AC/DC	
Mount	
Blank: Pole Mount (with SZ-012)	
W: Direct Mount	

LEL Signal Tower



LED

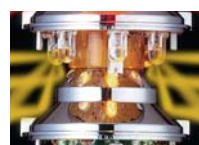


85dB at 1m
(LEL-FB type)

ø50

IP54
(Pole-mount type IP23)

**NPN/PNP
Open collector**



Reflection system



High visibility from any direction

Versatile, cost and energy efficient LED Signal Tower for every need.

- PATLITE's Exclusive Hybrid Prism Cut Lens: For enhanced visibility from any direction and distance.
- Original Dual Reflection System: For enhanced light diffusion, creating bright distinctive illumination while saving energy (Patent Pending).
- Built-in Alarms (FB Type): 2 selectable sound patterns with adjustable volume up to 85dB at 1m.
- Installation: Direct or pole mount
- Color-coordinated Wiring: Corresponds to the lens colors for quick wiring verification.
- Interchangeable LED Modules: No re-wiring even after installation.
- Main Body: ABS resin with superior resistance to impact and heat.
- Lens: Superior impact resistant and light translucent AS resin.
- NPN/PNP Compatible: Except 120/220V AC, compatible with NPN only.
- Available Colors: Red, Amber, Green, Blue, Clear.
- Conforms to the CE requirements (for 12V, 24V type).
- UL Recognized Component (File No. E215660)

Interchangeable LED modules

- Changeable color sequence: Easy to add / remove up to 5 colored modules even after installation.
- Note: LED modules of the same color will light up simultaneously.

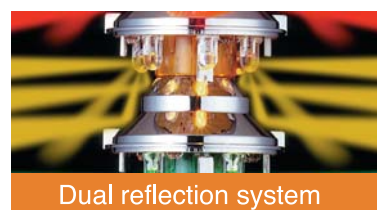


Easy to add and remove

If the number of LED module is changed, center shaft must be purchased.

The wiring remains the same

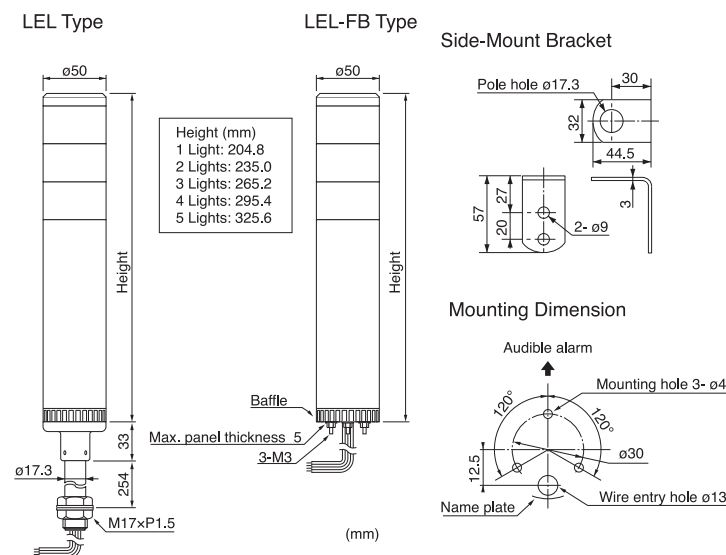
Each color of LED module corresponds to the lead wire color.



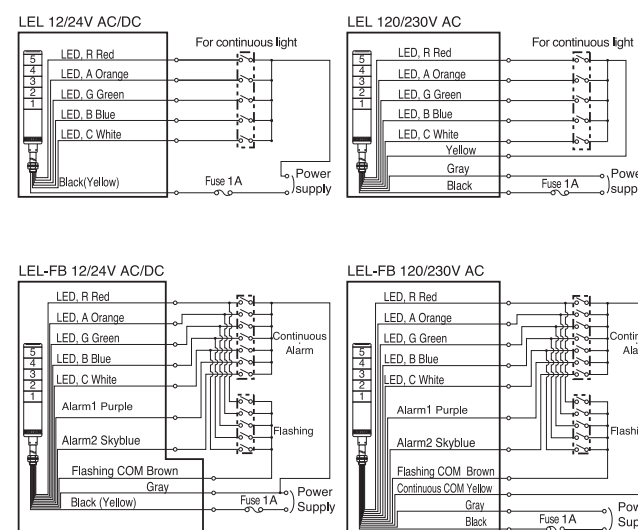
Dual reflection system

PATLITE's original double reflection system with its exclusive hybrid prism-cut lens and 5 color LED modules create distinctive illumination that is bright and even.

Dimensions



Wiring Diagram



Signal line voltage and current per LED module

Rated Voltage	Signal Line Voltage	LED			Alarm
		R	G	B	
12V AC/DC	12V AC/DC	R, A: 50mA	G, C: 40mA	B: 44mA	Signal Line Current
24V AC/DC	24V AC/DC	R, A: 25mA	G, C: 20mA	B: 22mA	40mA
10V, 230V AC	24V DC	R, A: 25mA	G, C: 20mA	B: 22mA	Inrush Current 250mA

Color Designator Chart *

Color of LED unit	Color of Lead wire
Red	Red
Amber	Orange
Green	Green
Blue	Blue
Clear/White	White

Alarm	Color of Lead wire
Alarm1	Purple
Alarm2	Skyblue

*Alarm wires do not exist for continuous only models.

Fuse for customer-supplied contact protection	
Voltage	Fuse
All voltage types	1A

Note: See page 171 for wiring diagram

LEL Type

Light Style	Model	Rated Voltage	Power Consumption
1 Light	LEL-101	12V AC/DC	1.1W
	LEL-102	24V AC/DC	1.6W
	LEL-112	120V AC	5.7W
LEL-123	230V AC		
LEL-201	12V AC/DC	1.7W	
2 Lights	LEL-202	24V AC/DC	2.2W
	LEL-212	120V AC	6.7W
	LEL-223	230V AC	
LEL-301	12V AC/DC	2.2W	
3 Lights	LEL-302	24V AC/DC	2.7W
	LEL-312	120V AC	7.5W
	LEL-323	230V AC	
4 Lights	LEL-401	12V AC/DC	
	LEL-402	24V AC/DC	3.2W
	LEL-423	230V AC	8.3W
5 Lights	LEL-501	12V AC/DC	3.2W
	LEL-502	24V AC/DC	3.7W
	LEL-512	120V AC	9.1W
LEL-523	230V AC		

FB type: approx. 60 flashes per minute.

How to Order

LEL-502FBW-RYGBC

Stacks 1-5	Color R: Red Y: Amber G: Green B: Blue C: Clear/White Top to bottom
Rated Voltage 01: 12V AC/DC 02: 24V AC/DC 12: 120V AC 23: 230V AC	Mount P: Pole Mount (with SZ-012) W: Direct Mount
Type Blank: Continuous light FB: Continuous or flashing light with audible alarm	

LU5

Signal Tower



LED



85dB at 1m
(FB type)

Electronic Sound 2
(FB type)

∅50

IP65

NPN/PNP
Open collector



Versatile modular Signal Tower featuring easy assembly and wiring designed for every need.

- PATLITE's Exclusive Hybrid Prism Cut Lens: For enhanced visibility from any direction and distance.
- Built-in Alarms (FB Type): 2 selectable sound patterns up to 85dB at 1m.
- Installation: Direct or pole* mount.
- Color-coordinated Wiring: Terminal block color corresponds to the lens colors for quick wiring verification.
- Interchangeable LED Modules: No re-wiring even after installation.
- Lens: Superior impact and heat resistant polycarbonate resin for superior durability and light transmission.
- Available Colors: Red, Amber, Green, Blue, Clear/White.
- Conforms to the CE requirements.
- UL Listed (File No. E215660).

Available By Special Order

- RoHS Compliance.
- Silver Color Body.
- Modules of the same color can be modified to operate from different terminals.

* Optional part sold separately.

LED Module



Module Color	Model	Rated Voltage	Operating Voltage	Current/Power	Operating Temperature Range	Mass
RED	LU5-E-R	24V DC	Rated voltage ± 10% (21.6~26.4V)	52mA/1.25W	-30°C~+60°C	44g ±10%
AMBER	LU5-E-Y					
GREEN	LU5-E-G					
BLUE	LU5-E-B					
CLEAR	LU5-E-C					

How to Order

LED Module		Base Module	
LU5-E-R	Color R: Red Y: Amber G: Green B: Blue C: Clear/White	LU5-02UFB	Rated Voltage 02: 24V DC Unit color Blank: Ivory White U: Silver color
LED unit		Type Blank: Continuous light FB: Continuous or flashing light with audible alarm	

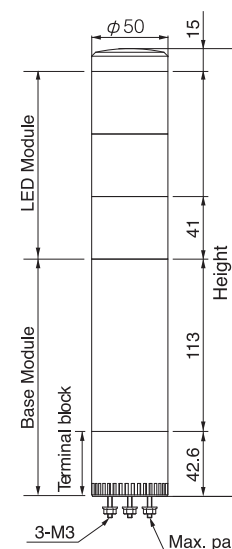
Base Module



Model	Options	Rated Voltage	Operating Voltage	Operating Temperature Range	Mass	Open Collector
LU5-02	Continuous Only	24V DC	Rated Voltage ± 10% (21.6~26.4V)	-30°C~+60°C	182g ±10%	PNP/NPN
LU5-02FB	2 Sounds / Flash					

FB type: approx. 60±12 flashes per minute

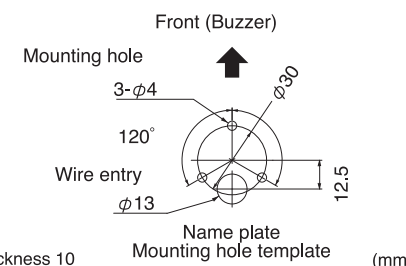
Dimensions



LU5 type

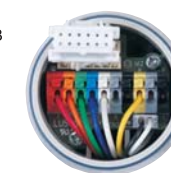
Height (mm)
1 Light: 211
2 Lights: 252
3 Lights: 293
4 Lights: 334
5 Lights: 375

Mounting Dimension



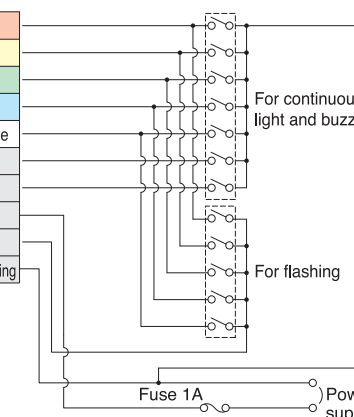
Wiring Diagram

LU5-02FB
24V DC



No.	Color	Function
No.1	Red	LED unit Red
No.2	Orange	LED unit Amber
No.3	Green	LED unit Green
No.4	Blue	LED unit Blue
No.5	White	LED unit Clear/White
No.6	Gray	Alarm 1
No.7	Black	Alarm 2
No.8	Yellow	COM
No.9	Gray	Flashing COM
No.10	Black	Power supply for flashing

<Recommended electric wire>
Solid wire : ∅0.8-∅1.2mm
Stranded wire : 0.3-1.25mm² (AWG 22-18)



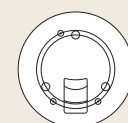
Optional Parts

Upper Bracket

SZ-60-U



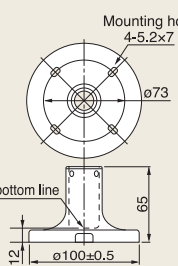
Required for pole mounting



Mounting Bracket

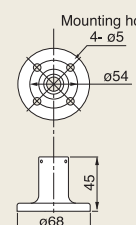
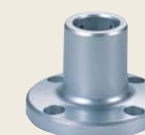
SZ-010

(For ∅21.7mm pole)

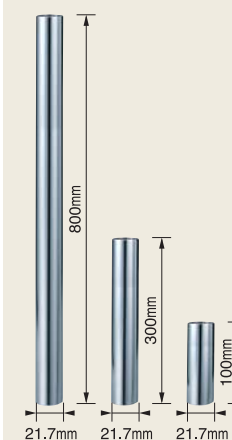


SZ-016A

(For ∅21.7mm pole)

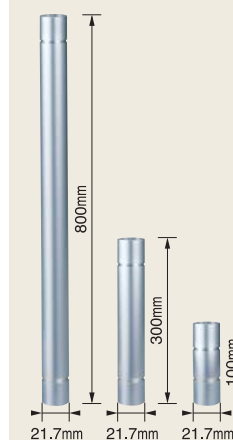


Steel Pole



800mm : **POLE-800S21**
300mm : **POLE-300S21**
100mm : **POLE-100S21**

Aluminum Pole

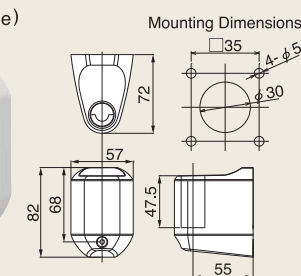


800mm : **POLE-800A21**
300mm : **POLE-300A21**
100mm : **POLE-100A21**

Wall Mount Bracket

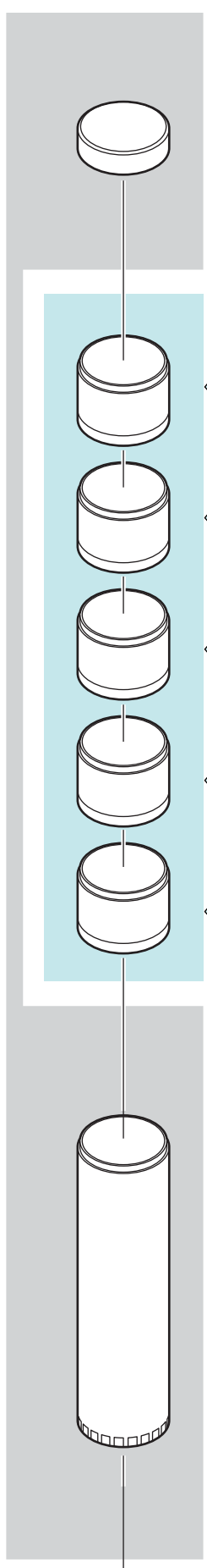
SZ-020

(For ∅21.7mm pole)



Model	Material
POLE-□□S21	Steel
POLE-□□A21	Aluminum
SZ-010	ADC12
SZ-016A	ADC12
SZ-70-B	ABS resin
SZ-020	ABS resin

※ADC12...Aluminum alloy die-cast



LED Units

Model	LU5-E-R	LU5-E-Y	LU5-E-G	LU5-E-B	LU5-E-C
Unit Color	●	●	●	●	○
Rated Voltage	24V DC				
Operating Voltage Range	Rated voltage ± 10% (21.6~26.4V)				
Current/Power Consumption	52mA/1.25W		42mA/1.0W		
Operating Temperature Range	-30°C~+60°C				
Mass	44g ± 10%				

● RED
● AMBER
● GREEN
● BLUE
○ CLEAR/WHITE

BASE Units

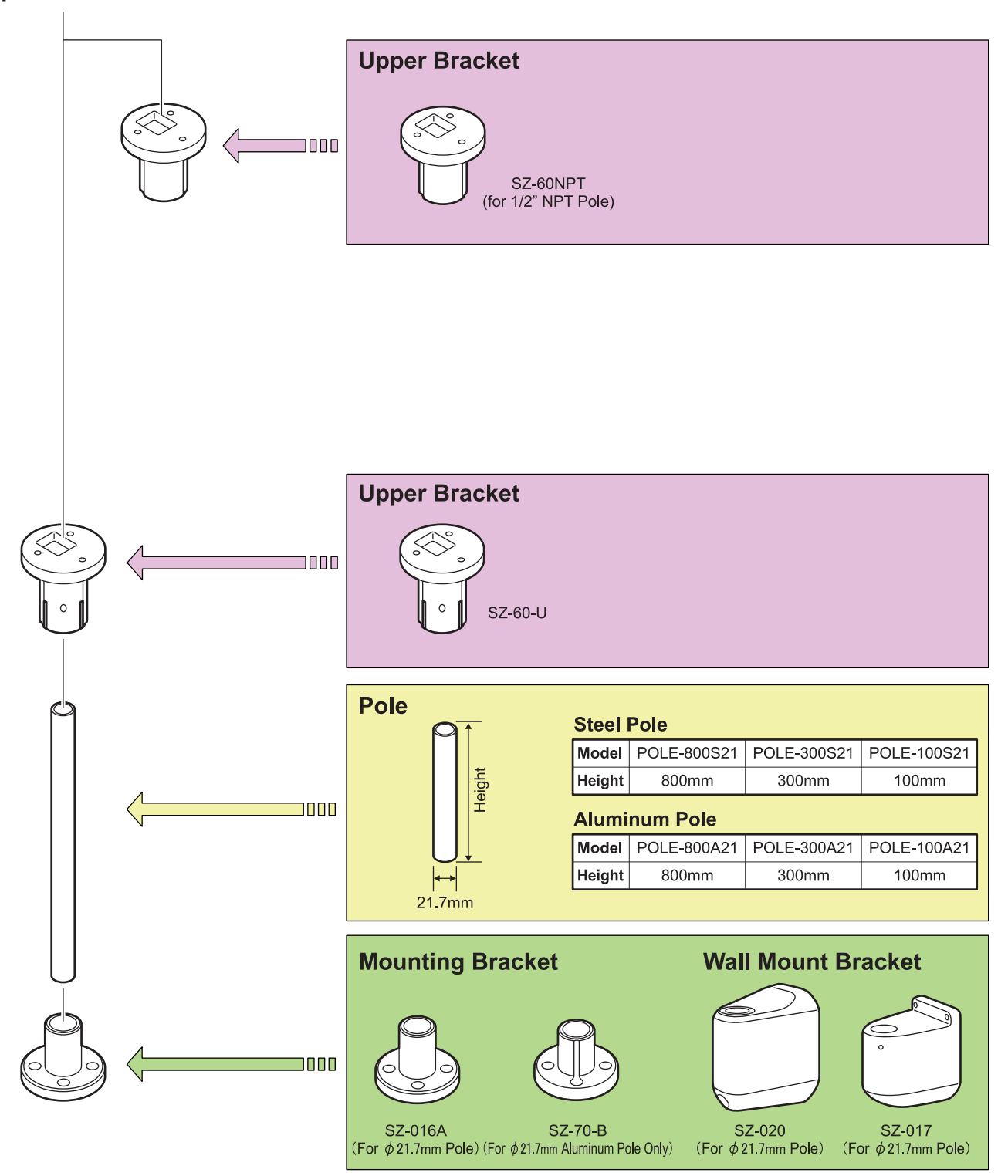
Model	LU5-02	LU5-02FB
Color	○	●
Standard Body/Short Body	Standard	
Rated Voltage	24V DC	
Operating Voltage Range	Rated voltage ± 10% (21.6~26.4V)	
Buzzer		*Buzzer 1 *Buzzer 2
Current Consumption	50 ± 10mA	24 ± 10mA
Power Consumption	1.2 ± 0.25W	0.58 ± 0.25W
Sound Level	Max: 85 ± 5dB (at 1m)	
Flashing Cycle	60 ± 12 flashes per minutes	
Operating Temperature	-30°C~+60°C	
Range	Upright, indoor only	
Mounting Direction	IP65	
Protection Rating	182g ± 10%	200g ± 10%
Mass	PNP/NPN	

Open Collector
 * Buzzer 1 : Continuous Sound **Buzzer 2 : Intermittent Sound

○ Ivory White
● Silver Color(U)

Optional Parts

Optional Parts



LME / LME-U/LME-N

Signal Tower



LED



Cabtyre (LME-U)



90dB at 1m
(FB type)

Electronic Sound 2
(FB type)

∅60

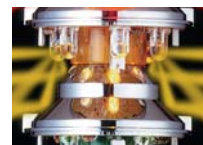
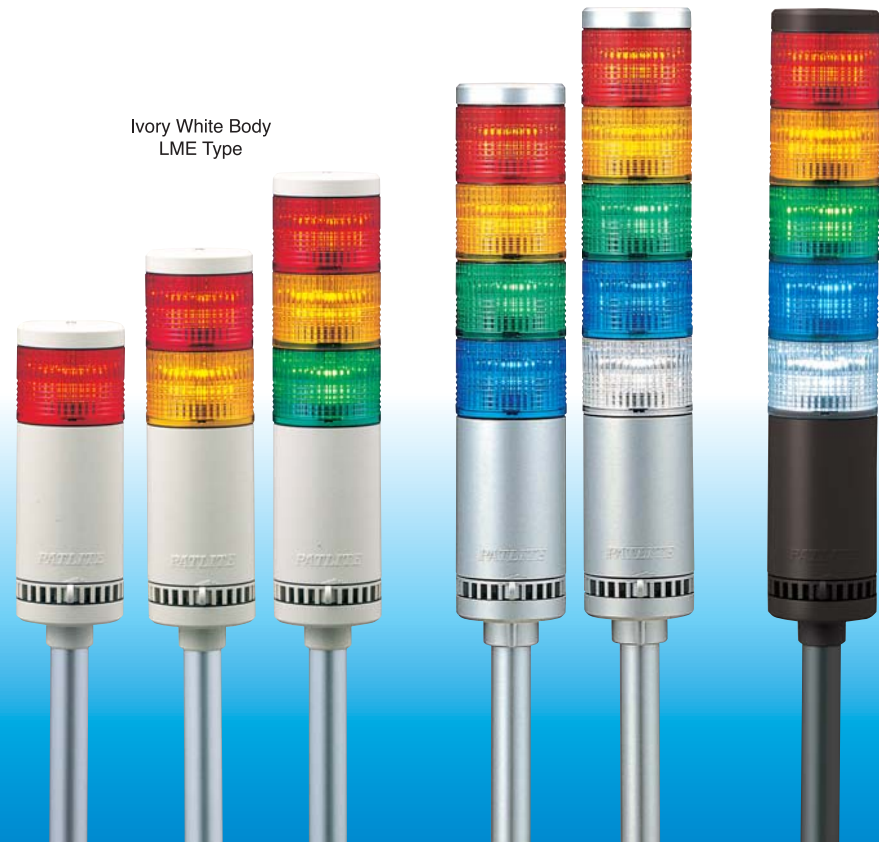
IP65
(FB,L,K type: IP54)

NPN/PNP
Open collector

Ivory White Body
LME Type

Silver Color Body
LME-U Type

Black Color Body
LME-N Type



Reflection system



High visibility from any direction



Adjustable volume
Max. 90dB at 1m

Versatile, cost and energy efficient LED Signal Tower for every need.

- PATLITE's Exclusive Hybrid Prism Cut Lens: For enhanced visibility from any direction and distance.
- Original Dual Reflection System: For enhanced light diffusion, creating bright distinctive illumination while saving energy (Patent Pending).
- FB type: 2 selectable built-in alarms with adjustable volume up to 90dB at 1m.
- Installation: Direct or pole mount.
- Interchangeable LED module: No re-wiring even after installation.
- Main Body: Superior impact and heat resistant ABS resin.
- Lens: Superior weather resistant and light translucent AS resin.
- NPN/PNP Compatible: Except 100/220V AC LME-U type, compatible with NPN only.
- Available Colors: Red, Amber, Green, Blue, Clear/White.
- Conforms to the CE requirements (for 24V type).
- UL Recognized Component (File No. E215660) (for 24V, 120V, 230V type only).

LME-U type

- Available 24V AC/DC only.
- Silver Color Body.
- Cabtyre Cable: Versatile and flexible 3m cable.
- Pole-mount with circular mounting base or wall mount bracket as an optional accessory.

Interchangeable LED modules

- Changeable color sequence: Easy to add / remove up to 5 colored modules even after installation.
- Note: LED modules of the same color within a signal tower will light up simultaneously.

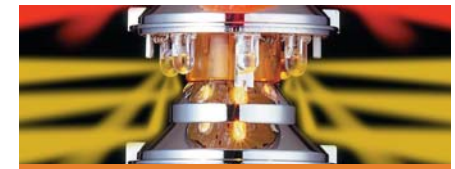


Easy to add and remove

If the number of LED module is changed, center shaft must be purchased.

The wiring remains the same

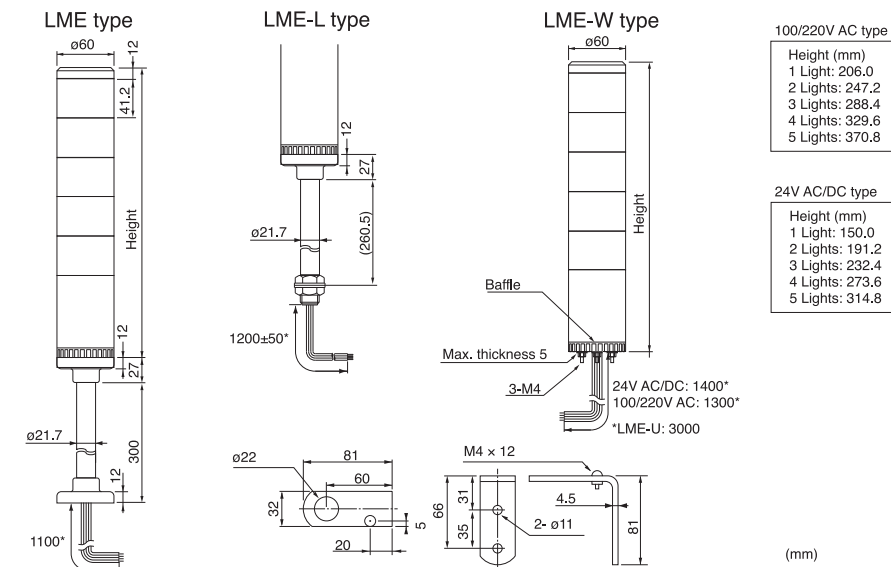
Each color of LED module corresponds to the lead wire color.



Dual reflection system

PATLITE's original dual reflection system with its exclusive hybrid prism-cut lens and 5 color LED modules create bright, distinctive, even illumination.

Dimensions



Wiring Diagram

Note: See page 172 for wiring diagram

LME Type

Light Style	Model	Rated Voltage	Power Consumption	Mass		
				LME	LME-L	LME-W
1 Light	LME-102	24V AC/DC	2.2W	0.43kg	0.73kg	0.27kg
	LME-110	100V AC	5.1W	0.68kg	1.06kg	0.52kg
	LME-112	120V AC				
	LME-120	220V AC				
	LME-123	230V AC				
2 Lights	LME-202	24V AC/DC	3.4W	0.48kg	0.78kg	0.32kg
	LME-210	100V AC	7.1W	0.73kg	1.10kg	0.57kg
	LME-212	120V AC				
	LME-220	220V AC				
	LME-223	230V AC				
3 Lights	LME-302	24V AC/DC	3.8W	0.53kg	0.83kg	0.37kg
	LME-310	100V AC	7.9W	0.78kg	1.14kg	0.62kg
	LME-312	120V AC				
	LME-320	220V AC				
	LME-323	230V AC				
4 Lights	LME-402	24V AC/DC	4.2W	0.58kg	0.88kg	0.42kg
	LME-410	100V AC	8.7W	0.83kg	1.18kg	0.67kg
	LME-412	120V AC				
	LME-420	220V AC				
	LME-423	230V AC				
5 Lights	LME-502	24V AC/DC	4.6W	0.63kg	0.93kg	0.47kg
	LME-510	100V AC	9.5W	0.86kg	1.22kg	0.72kg
	LME-512	120V AC				
	LME-520	220V AC				
	LME-523	230V AC				

FB type: approx. 60 flashes per minute.

How to Order

LME-502UFBW-RYGBC-Z	
Stack	Color of LED
1-5	R: Red Y: Amber G: Green B: Blue C: Clear/White Top to bottom
Rated Voltage	Color of Lens
02: 24V AC/DC 10: 100V AC 12: 120V AC 20: 220V AC 23: 230V AC	Blank: Colored lens Z: Clear lens
Body Color	Type
Blank: Ivory white N: Black color U: Silver color	Blank: Continuous light FB: Continuous or flashing light with audible alarm
Mount	
Blank: Pole Mount (with circular mounting bracket) K: Pole Mount (with SZ-020) L: Pole Mount (with SZ-013) W: Direct Mount	

LME-S / LME-Q

Signal Tower



LED



Cabtyre



90dB at 1m
(FB type)

Electronic Sound 2
(FB type)

∅60

IP65

NPN
Open collector

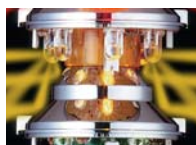


Versatile, cost and energy efficient LED Signal Tower for every need.

- PATLITE's Exclusive Hybrid Prism-Cut Lens: For enhanced visibility from any direction and distance.
- Original Dual Reflection System: For enhanced light diffusion, creating bright, distinctive illumination while saving energy (Patent Pending).
- FB type: 2 selectable built-in alarms with adjustable volume up to 90dB at 1m.
- Installation: Direct or pole mount.
- Interchangeable Modules: No re-wiring even after installation.
- Patlite's new single tier, triple or quadruple color unit: For multi color display applications with limited vertical space.
- Pole-mount type: Includes circular mounting base as standard equipment.
- Available Colors: Refer to color combination table.
- Conforms to the CE requirements (for 24V type).
- UL Recognized Component (File No. E215660) (for 24V, 120V, 230V type only).

Available by Special Order

- PNP compatible.
- Silver color body.



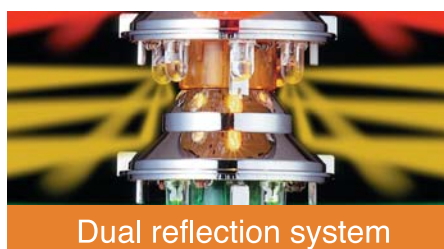
Reflection system



High visibility from any angle



Adjustable volume
Max. 90dB at 1m



Dual reflection system

PATLITE's original dual reflection system with its exclusive hybrid prism-cut lens and 5 color LED modules create bright, distinctive, even illumination.

Patlite's new single tier, triple color or quadruple color unit

S1: Red, Amber, Green



S4: Red, Green, Blue



S7: Amber, Green, Blue



Q1: Red, Amber, Green, Blue



Q2: Red, Amber, Green, Clear/White



Q4: Amber, Green, Blue, Clear/White

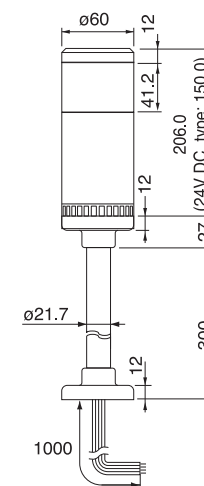


Clear lens

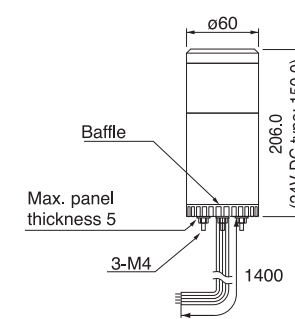
Patlite's new single-tier, multi-color unit is ideally suited for installations requiring a multiple color display but have limited vertical space. Clear lenses distinguish between lit and unlit lamps, and the unlit set integrates visually with the equipment to which it is attached.

Dimensions

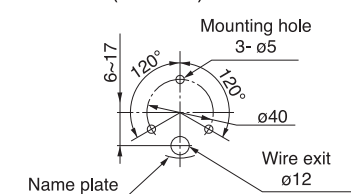
LME type



LME-W type



Mounting Dimension (LME-W)



(mm)



Wiring Diagram

Note: See page 172 for wiring diagram

LME-S / LME-Q Type

LME-S type

Light System	Model	Rated Voltage	Power Consumption	Mass	
				LME	LME-W
1 Light	LME-102S	24V DC	2.2W	0.43kg	0.27kg
	LME-110S	100V AC	5.1W	0.86kg	0.52kg
	LME-112S	120V AC			
	LME-120S	220V AC			
	LME-123S	230V AC			

FB type: approx. 60 flashes per minute.

LME-Q type

Light System	Model	Rated Voltage	Power Consumption	Mass	
				LME	LME-W
1 Light	LME-102Q	24V DC	2.2W	0.43kg	0.27kg
	LME-110Q	100V AC	5.1W	0.68kg	0.52kg
	LME-112Q	120V AC			
	LME-120Q	220V AC			
	LME-123Q	230V AC			

FB type: approx. 60 flashes per minute.

How to Order

LME-102UFBW-S1

Rated Voltage
02: 24V DC
10: 100V AC
12: 120V AC
20: 220V AC
23: 230V AC

Body color
Blank: Ivory white
U: Silver color

Type
Blank: Continuous light
FB: Continuous or flashing light with audible alarm

Mount
Blank: Pole Mount (with circular mounting bracket)
W: Direct Mount

Color
S1: Red, Amber, Green
S4: Red, Green, Blue
S7: Amber, Green, Blue
Q1: Red, Amber, Green, Blue
Q2: Red, Amber, Green, Clear/White
Q4: Amber, Green, Blue, Clear/White

LMC

Signal Tower

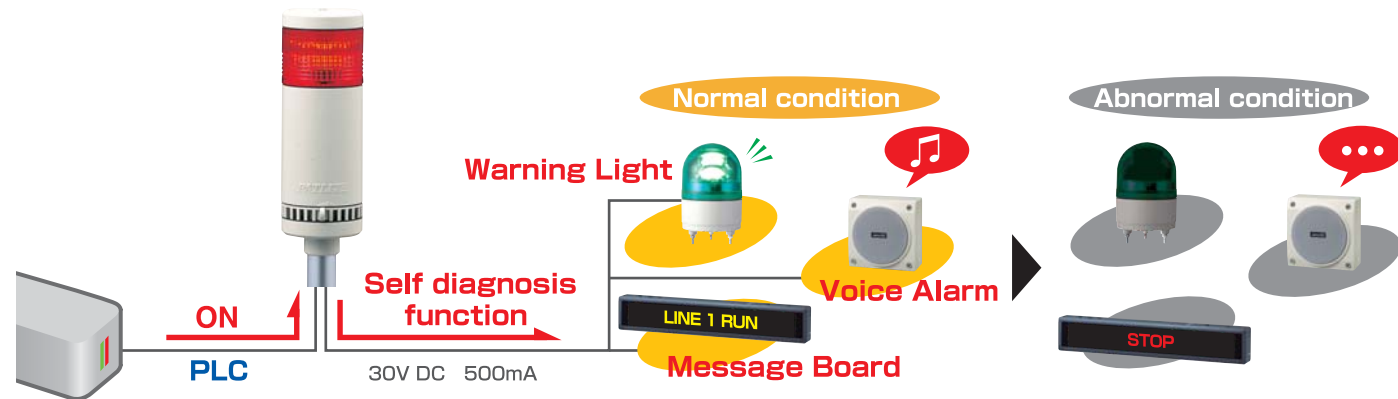


LED



∅60

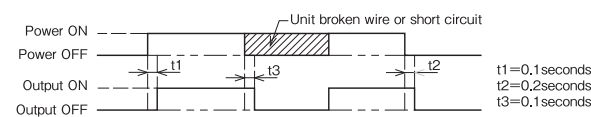
IP54



24V DC

LED Unit	Power Source (Signal Wire) OFF			Power Source (Signal Wire) ON		
	Normal	Short-circuit	Contact Disconnected	Normal	Short-circuit	Contact Disconnected
LED	Turned off	Turned off	Turned off	continuous light	Turned off	Turned off
Output	OFF	OFF	OFF	ON	OFF	OFF

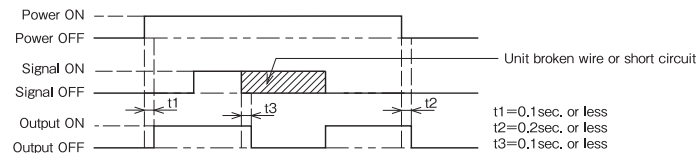
Timing chart



100/120/220V AC

LED Unit	Power Source OFF						Power Source ON					
	Signal Wire OFF			Signal Wire ON			Signal Wire OFF			Signal Wire ON		
LED	Normal	Short-circuit	Contact Disconnected	Normal	Short-circuit	Contact Disconnected	Normal	Short-circuit	Contact Disconnected	Normal	Short-circuit	Contact Disconnected
LED	Turned off	Turned off	Turned off	Turned off	Turned off	Turned off	Turned off	Turned off	Turned off	continuous light	Turned off	Turned off
Output	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF

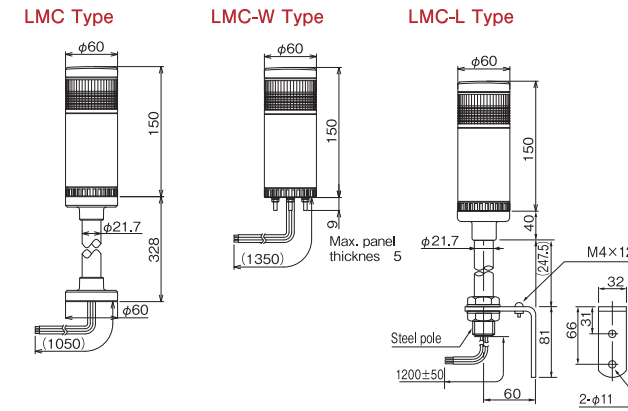
Timing chart



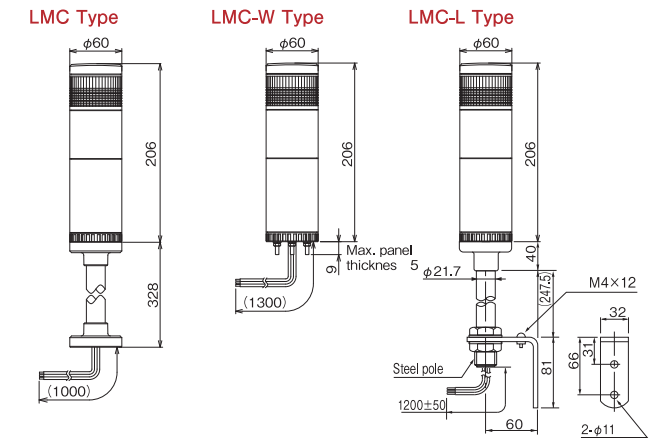
- Conforms to the CE requirements (for 24V type).
- UL Recognized Component (File No. E215660) (for 24V, 120V, 230V type only).

Dimensions

24V DC

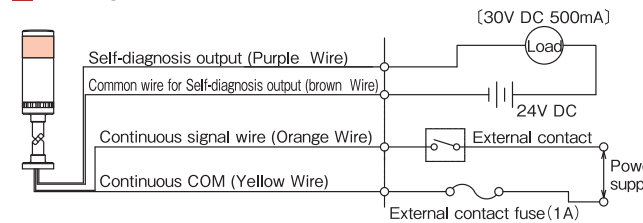


100/120/220V AC



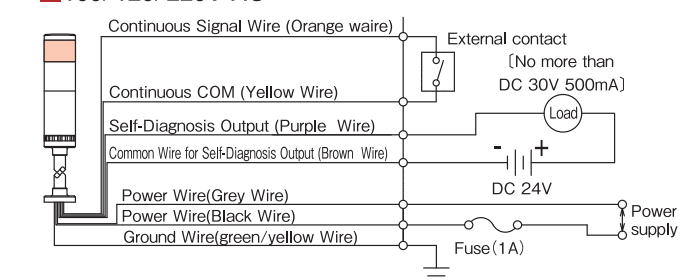
Wiring Diagram

24V DC



Wire Type
UL1430 AWG22

100/120/220V AC

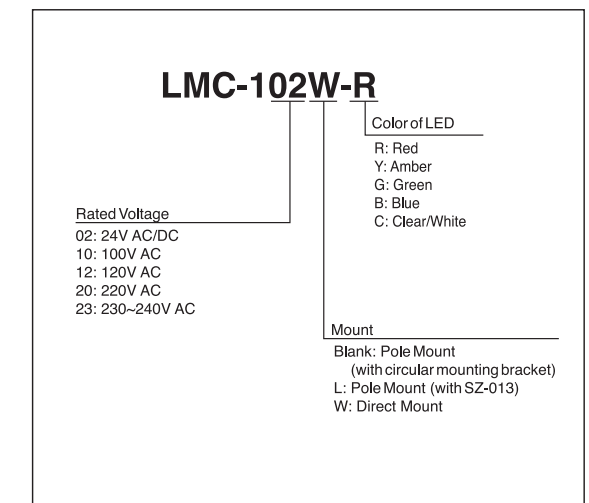


	Wire Type		
	Power Wire	Signal Wire	Ground Wire
100/220V	UL1007 0.5mm ²	UL1430 0.3mm ²	UL1015 0.75mm ²
120/230V	UL1015 0.75mm ²	UL1430 0.3mm ²	UL1015 0.75mm ²

LMC Type

Model	Rated Voltage	Power Consumption	Mass
LMC-102-□	24V AC/DC	1.5W	0.46kg
LMC-102 L-□			0.76kg
LMC-102W-□			0.30kg
LMC-110-□	100V AC	4.0W	0.71kg
LMC-110 L-□			1.01kg
LMC-110W-□			0.55kg
LMC-112-□	120V AC	4.0W	0.71kg
LMC-112 L-□			1.01kg
LMC-112W-□			0.55kg
LMC-120-□	220V AC	5.0W	0.71kg
LMC-120 L-□			1.01kg
LMC-120W-□			0.55kg
LMC-123-□	230~240V AC	5.5W	0.71kg
LMC-123 L-□			1.01kg
LMC-123W-□			0.55kg

How to Order



LMS

Signal Tower



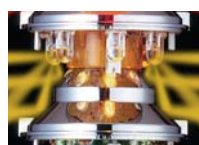
LED



∅60

IP65

NPN/PNP
Open collector



Reflection system



High visibility from any direction

Versatile, cost and energy efficient LED Signal Tower for every need.

- PATLITE's Exclusive Hybrid Prism Cut Lens: For enhanced visibility from any direction and distance.
- Original Dual Reflection System: For enhanced light diffusion, creating bright distinctive illumination while saving energy (Patent Pending).
- Installation: Pole mount.
- Interchangeable Modules: No re-wiring even after installation.
- Main Body: Superior impact and heat resistant ABS resin.
- Lens: Superior weather resistant and light translucent AS resin.
- Available Colors: Red, Amber, Green, Blue, Clear/White.
- Conforms to the CE requirements.
- UL Recognized Component (File No. E215660).

Available by Special Order

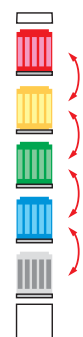
- Cabtyre Cable: Versatile and flexible 3m cable.

Interchangeable LED modules

- Changeable color sequence: Easy to add/ remove up to 5 colored modules even after installation.
- Note: LED modules of the same color within a signal tower will light up simultaneously.

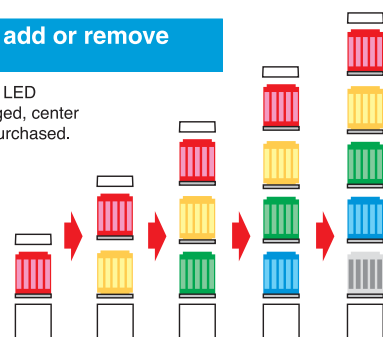
The wiring remains the same.

Each color of LED module corresponds to the lead wire color.

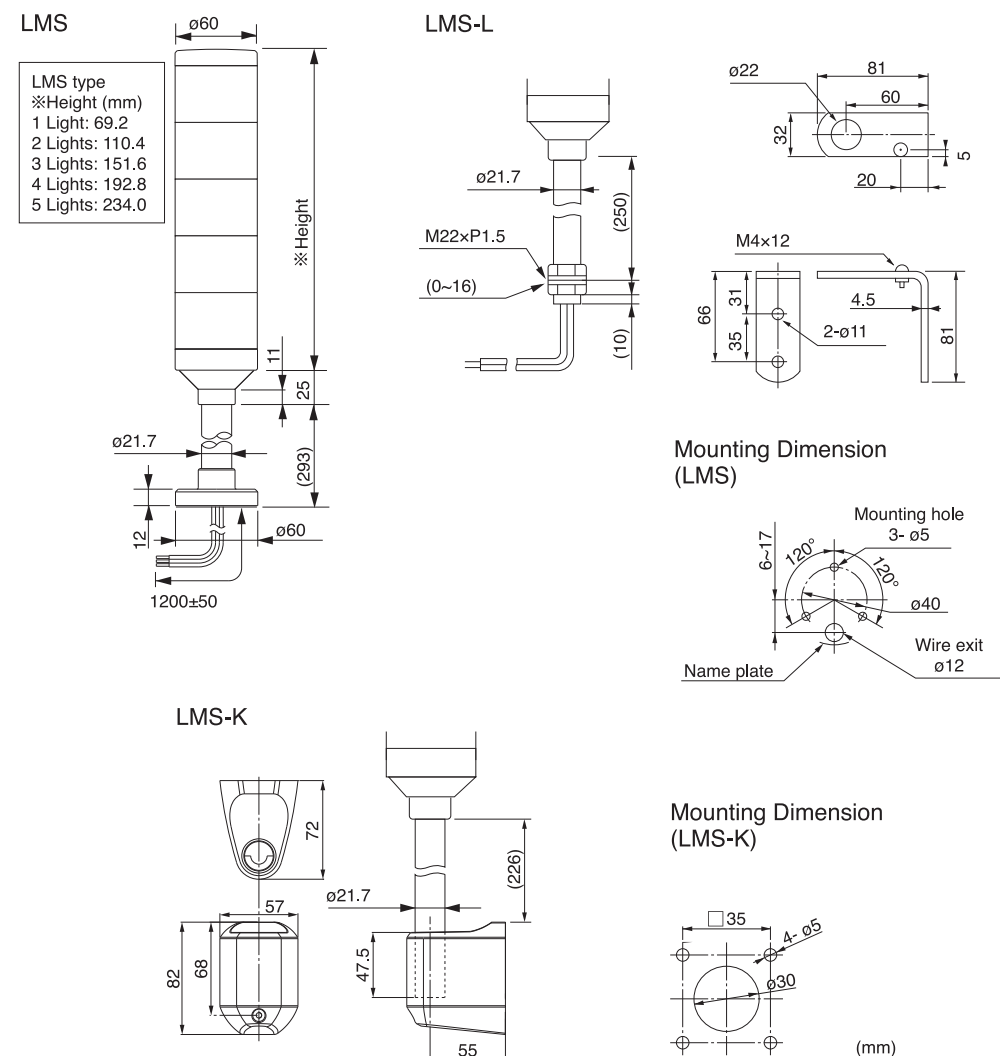


Easy to add or remove

If the number of LED module is changed, center shaft must be purchased.



Dimensions



All clear lens type is also available.



Please add - Z after the part number when you place the order for all clear lens type.

Wiring Diagram

Note: See page 172 for wiring diagram

LMS Type

Light System	Model	Rated Voltage	Power Consumption	Mass		
				LMS	LMS-L	LMS-K
1 Light	LMS-102	24V AC/DC	1.2W	0.29kg	0.62kg	0.42kg
2 Lights	LMS-202	24V AC/DC	2.4W	0.34kg	0.67kg	0.48kg
3 Lights	LMS-302	24V AC/DC	2.8W	0.39kg	0.72kg	0.54kg
4 Lights	LMS-402	24V AC/DC	3.2W	0.44kg	0.77kg	0.60kg
5 Lights	LMS-502	24V AC/DC	3.6W	0.49kg	0.82kg	0.66kg

How to Order

LMS-502L-RYGBC-Z

Stack 1~5

Rated Voltage 02: 24V AC/DC

Mount

Blank: Pole Mount (with circular mounting bracket)
K: Pole Mount (with SZ-020)
L: Pole Mount (with SZ-013)

Color of LED
R: Red
Y: Amber
G: Green
B: Blue
C: Clear/White
Top to bottom

Color of Lens
Blank: Colored lens
Z: Clear lens

LHE

Signal Tower

LED



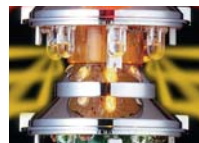
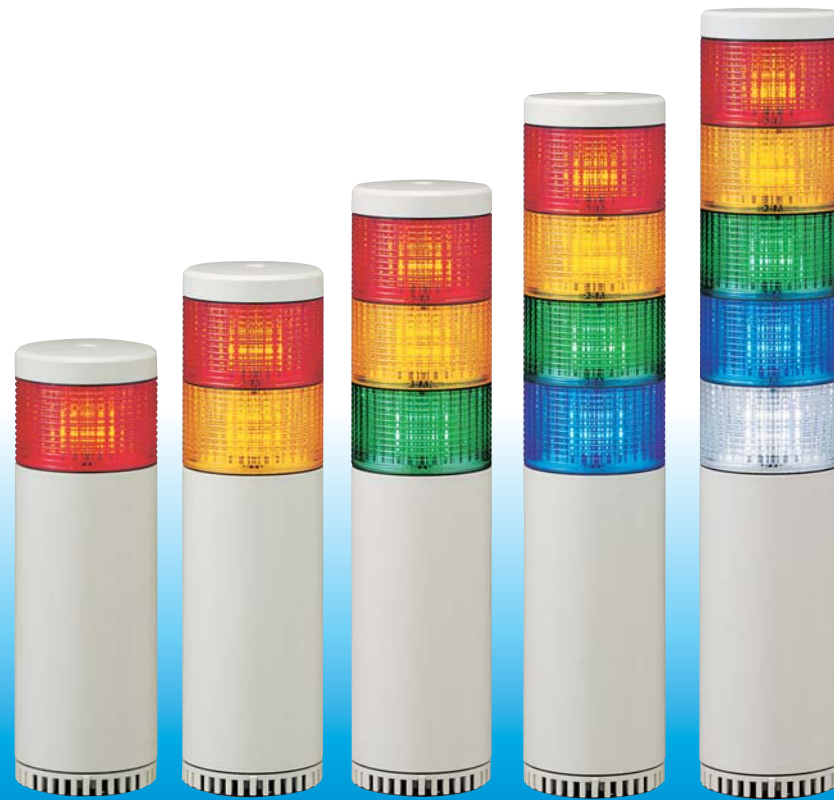
90dB at 1m
(FB type)

Electronic Sound 2
(FB type)

Ø70

IP65
(FB type IP54)

NPN/PNP
Open collector



Reflection system



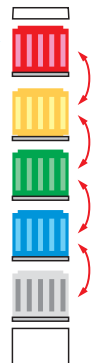
Adjustable volume
Max. 90dB at 1m

Signal Tower with waterproof design for wet environments.

- Original LED reflection system: Improves brightness and provides maintenance free operation.
- FB type: 2 built-in alarms with adjustable volume up to 90dB at 1m.
- Installation: Direct mount; pole mount is available with optional mounting pole.
- Interchangeable Modules: No re-wiring even after installation.
- Lens: Superior impact and heat resistant AS resin for superior durability and light transmission.
- Available Colors: Red, Amber, Green, Blue, Clear/White.
- Conforms to the CE requirements (for 24V type).
- UL Recognized Component (File No. E215660) (for 24V, 120V, 230V type only).

Interchangeable LED modules

- Changeable color sequence: Easy to add / remove up to 5 colored modules even after installation.
- Note: LED modules of the same color within a signal tower will light up simultaneously.

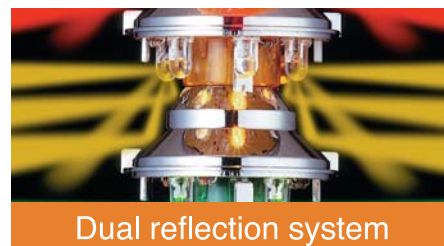


Easy to add and remove

If the number of LED module is changed, center shaft must be purchased.

The wiring remains the same

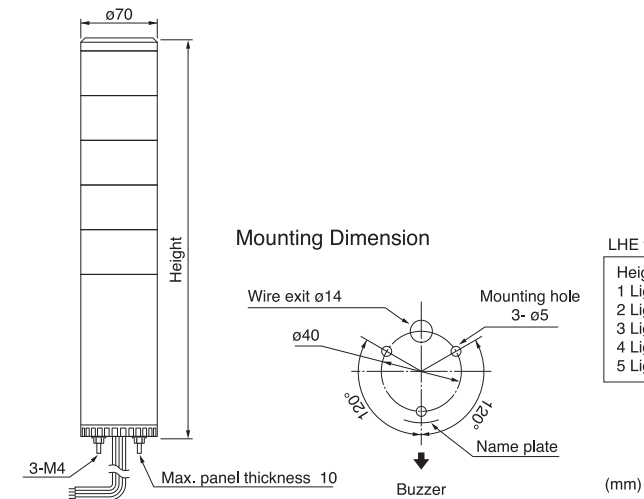
Each color of LED module corresponds to the lead wire color.



Dual reflection system

PATLITE's original dual reflection system with its exclusive hybrid prism-cut lens and 5 color LED modules create bright, distinctive, even illumination.

Dimensions



Optional parts



"Super Bright" LED provides highest level of visibility.



Wiring Diagram

Note: See page 171 for wiring diagram

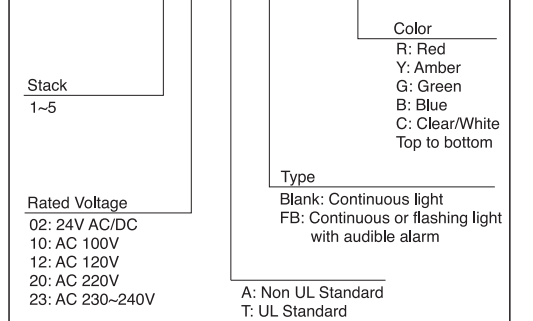
LHE Type

Light System	Model	Rated Voltage	Power Consumption
1 Light	LHE-102A/AFB	24V AC/DC	2.2W
	LHE-110A/AFB	100V AC	4.7W
	LHE-112T/TFB	120V AC	4.7W
	LHE-120A/AFB	220V AC	4.7W
	LHE-123A/AFB	230~240V AC	4.7W
2 Lights	LHE-202A/AFB	24V AC/DC	3.4W
	LHE-210A/AFB	100V AC	6.4W
	LHE-212T/TFB	120V AC	6.4W
	LHE-220A/AFB	220V AC	6.4W
	LHE-223A/AFB	230~240V AC	6.4W
3 Lights	LHE-302A/AFB	24V AC/DC	4.4W
	LHE-310A/AFB	100V AC	7.9W
	LHE-312T/TFB	120V AC	7.9W
	LHE-320A/AFB	220V AC	7.9W
	LHE-323A/AFB	230~240V AC	7.9W
4 Lights	LHE-402A/AFB	24V AC/DC	5.4W
	LHE-410A/AFB	100V AC	9.4W
	LHE-412T/TFB	120V AC	9.4W
	LHE-420A/AFB	220V AC	9.4W
	LHE-423A/AFB	230~240V AC	9.4W
5 Lights	LHE-502A/AFB	24V AC/DC	6.4W
	LHE-510A/AFB	100V AC	10.9W
	LHE-512T/TFB	120V AC	10.9W
	LHE-520A/AFB	220V AC	10.9W
	LHE-523A/AFB	230~240V AC	10.9W

FB type approx. 60 flashes per minute.

How to Order

LHE-502AFB-RYGBC



LU7

Signal Tower



LED



90dB at 1m
(FB type)

Electronic Sound 2
(FB type)

ø70

IP65

NPN/PNP
Open collector



Versatile modular Signal Tower featuring easy assembly and wiring designed for every need.

- PATLITE's Exclusive Hybrid Prism Cut Lens: For enhanced visibility from any direction and distance.
- FB type: 2 selectable built-in alarms with adjustable volume up to 90dB at 1m.
- Installation: Direct mount (Pole mount with optional parts).
- Color-coordinated Terminal Block: Corresponds to the lens colors for quick wiring verification in the base unit.
- Interchangeable LED module: No re-wiring even after installation.
- Lens: Superior impact and heat resistant polycarbonate resin for superior durability and light transmission.
- Available Colors: Red, Amber, Green, Blue, Clear/White.
- Conforms to the CE requirements (for 24V type).
- UL Listed (File No. E215660).

Available by Special Order

- Silver Color Body.

LED Module

Model	Color
LU7-E-R	Red
LU7-E-Y	Amber
LU7-E-G	Green
LU7-E-B	Blue
LU7-E-C	Clear/White



Base Module

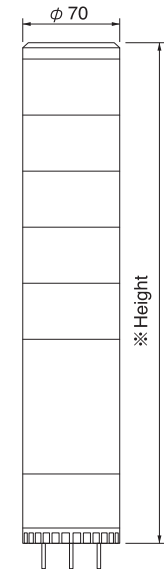
Model	Rated Voltage	Alarm / Flash
LU7-02	24V DC	-
LU7-02FB	24V DC	2 sounds / Flash
LU7-M2	90~250V AC	-
LU7-M2FB	90~250V AC	2 sounds / Flash

FB type: approx. 60 flashes per minute.



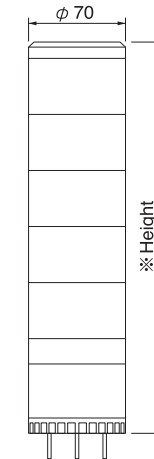
Dimensions

LU7 Standard Body



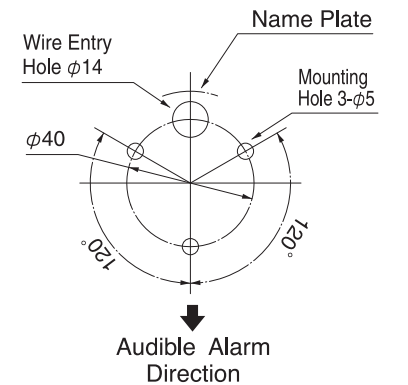
※Height(mm)	
1Light	: 211
2Lights	: 252
3Lights	: 293
4Lights	: 334
5Lights	: 375

LU7-02S Short Body



※Height(mm)	
1Light	: 118
2Lights	: 159
3Lights	: 200
4Lights	: 241
5Lights	: 282

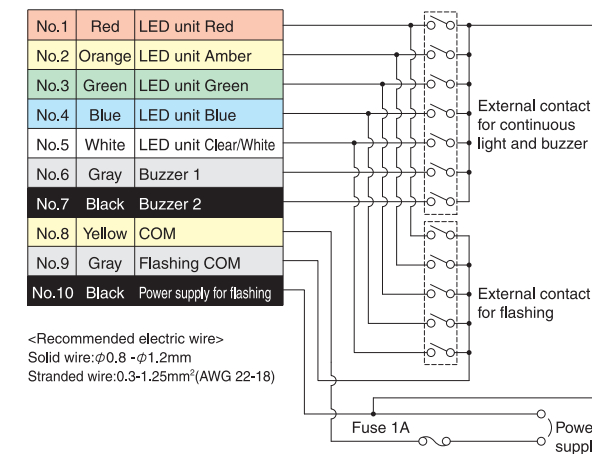
Mounting Dimensions



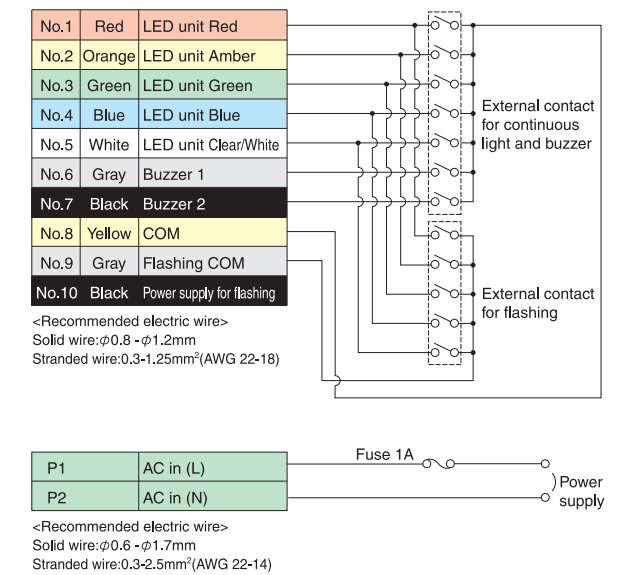
Wiring Diagram

Base Unit Wiring example

LU7-02FB 24V DC



LU7-M2FB 90-250V AC



LU7-02FB



LU7-M2FB



LED Units



Model	LU7-E-R	LU7-E-Y	LU7-E-G	LU7-E-B	LU7-E-C
Unit color	LED Unit RED	LED Unit AMBER	LED Unit GREEN	LED Unit BLUE	LED Unit CLEAR/WHITE
Rated Voltage	24V DC				
Operating Voltage Range	Rated Voltage $\pm 10\%$ (21.6~26.4V)				
Current/Power Consumption	52mA/1.25W		42mA/1.0W		
Operating Temperature Range	-30°C ~ +60°C				
Mass	60g $\pm 10\%$				

※ Operates with all voltage base units LU7-02, LU7-02FB, LU7-M2 and LU7-M2FB listed below.

Base Units

Model	LU7-02S	LU7-02	LU7-02FB	LU7-M2	LU7-M2FB	Unit Color Variation
Rated Voltage	24V DC			90~250V AC (50/60Hz)		
Operating Voltage Range	Rated voltage $\pm 10\%$ (21.6~26.4V)			90~250V AC (50/60Hz)		
Buzzer	—		*Buzzer 1 **Buzzer 2	—		
Current Consumption	—		50 \pm 10mA ; 24 \pm 10mA	—		
Power Consumption	—		1.2 \pm 0.25W ; 0.58 \pm 0.25W	—		
Sound Level	—		Max: 90 \pm 5dB (at 1m) Min: 70dB or Less (at 1m)	—		
Flashing Cycle	—		60 \pm 12 flashes per minute	—		
Operating Temperature Range	-30°C ~ +60°C			-25°C ~ +55°C		
Mounting Direction	Upright, indoor only			Upright, indoor only		
Protection Rating	IP65			IP65		
Mass	150g $\pm 10\%$	250g $\pm 10\%$	280g $\pm 10\%$	310g $\pm 10\%$	340g $\pm 10\%$	
Open Collector	PNP/NPN			NPN		

※ *Buzzer 1:Continuous sound **Buzzer 2:Intermittent sound

[External Contact Capacity]

Voltage Specifications		24V DC	90~250V AC
LED Unit (1-Light)	Current Consumption	Red·Amber : 52mA	Green·Blue·Clear/White : 42mA
	Contact Capacity	Is ≥ 100 mA, Vs ≥ 35 V AC	
Buzzer	Current Consumption	50mA	
	Contact Capacity	Is ≥ 100 mA, Vs ≥ 35 V AC	
Power Supply	Current Consumption	360mA	40mA (250V) ~ 110mA (90V)
	Contact Capacity	Is ≥ 500 mA Vs ≥ 35 V AC	9A (90V) ~ 25A (250V) Vs ≥ 250 V AC

※ Is : Current Capacity Vs : Withstanding voltage

[External Contact Fuse]

Voltage	Fuse Rating
All models	250V 1A

※ Use a fuse conforming to the rated current of the machine of the installed product.
(Example: UL class J type fuse)

Optional Parts

Upper Bracket

SZ-50NPT
(For 1/2" NPT Pole)

SZ-50-U
Ivory White

SZ-50U-U
Silver Color

SZ-50K-U
Black

for U.S.A.

Pole

Steel Pole

Aluminum Pole

800mm : **POLE-800S21**
300mm : **POLE-300S21**
100mm : **POLE-100S21**

800mm : **POLE-800A21**
300mm : **POLE-300A21**
100mm : **POLE-100A21**

Adaptor

SZ-904

for U.S.A.

Wall Mount Bracket

SZ-018
Ivory White

SZ-018U
Silver Color

SZ-018K
Black

SZ-020
(For φ21.7mm Pole)

SZ-017
(For φ21.7mm Pole)

Mounting Dimensions

Max. Mounting Hole Size

Mounting Bracket

SZ-016A
(For φ21.7mm Pole)

SZ-70-B
(For φ21.7mm Aluminum Pole Only)

Pre-assembled

SZ-50T

SZ-50L

Mounting Hole 4-5.2x7

Pole Bottom Line

Ground Screw M4x12

Hexagon Nut

Mounting Hole 2-φ11

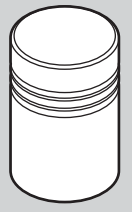
M22

Model	Upper Bracket	Pole	L Bracket	Bushing	Mounting Bracket
SZ-50T	ADC12	Steel	—	—	ADC12
SZ-50L	ADC12	Steel	SPHC	EPT	—

Model	Material
SZ-50-U	ADC12
SZ-50U-U	ADC12
SZ-50K-U	ADC12
SZ-50-NPT	Aluminum
POLE-□□S21	Steel
POLE-□□A21	Aluminum
SZ-016A	ADC12
SZ-904	Aluminum
SZ-70-B	ABS resin
SZ-017	ADC12
SZ-020	ABS resin


※ ADC12:Aluminum alloy die-cast SPHC:Hot rolled mild (sheet) steel EPT:Ethylene propylene rubber

Voice and Sound Module



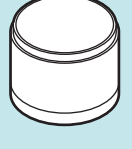
Model	LU7-V1
Type	Voice Synthesizer
Rated Voltage	DC24V
Power Consumption	3.5W
Weight	0.17kg

LED Units



Model	LU7-E-R	LU7-E-Y	LU7-E-G	LU7-E-B	LU7-E-C
Unit Color					
Rated Voltage	24V DC				
Operating Voltage Range	Rated Voltage ± 10% (21.6 ~ 26.4V)				
Current/Power Consumption	52mA/1.25W		42mA/1.0W		
Operating Temperature Range	-30°C ~ +60°C				
Mass	60g ± 10%				

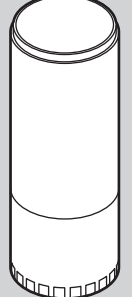
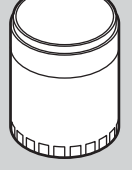
LED Strobe Module



Model	LU7-XE-R	LU7-XE-Y	LU7-XE-G	LU7-XE-B	LU7-XE-C
Unit Color					
Rated Voltage	24V DC				
Power Consumption	290mA	290mA	140mA	270mA	280mA
Mass	0.07kg				

RED
 AMBER
 GREEN
 BLUE
 CLEAR/WHITE

BASE Units

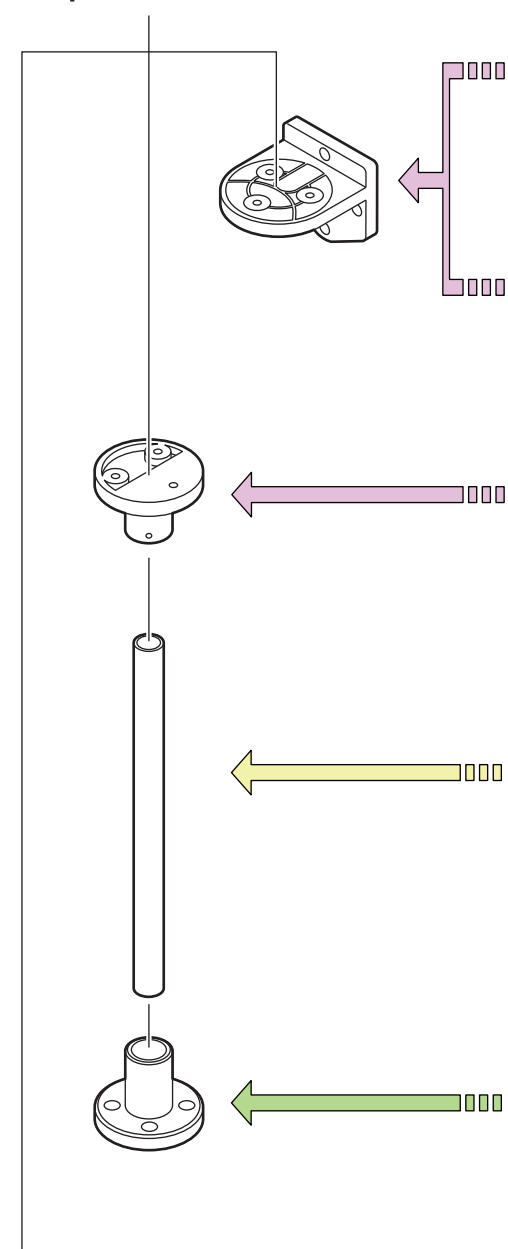



Model	LU7-02S	LU7-02	LU7-02FB	LU7-M2	LU7-M2FB
Color					
Standard Body/Short Body	Short	Standard		Standard	
Rated Voltage	24V DC			90~250V (50/60Hz)	
Operating Voltage Range	Rated voltage ± 10% (21.6 ~ 26.4V)			90~250V (50/60Hz)	
Buzzer	-		*Buzzer 1; *Buzzer 2	-	
Current Consumption	-		50 ± 10mA; 24 ± 10mA	-	
Power Consumption	-		1.2 ± 0.25W; 0.58 ± 0.25W	-	
Sound Level	-		Max: 90 ± 5dB (at 1m) Min: 70dB or Less (at 1m)	-	
Flashing Cycle	-		60 ± 12 flashes per minute	-	
Operating Temperature Range	-30°C ~ +60°C			-25°C ~ +55°C	
Mounting Direction	Upright, Indoor only			Upright, Indoor only	
Protection Rating	IP65			IP65	
Mass	150g ± 10%	250g ± 10%	280g ± 10%	310g ± 10%	340g ± 10%
Open Collector	PNP/NPN			NPN	

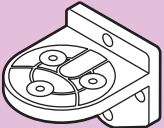
* Buzzer 1 : Continuous Sound **Buzzer 2 : Intermittent Sound

Ivory White
 Silver Color (U)
 Black (K)

Optional Parts

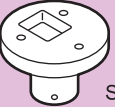


Wall Mount Bracket




Model	SZ-18	SZ-18U	SZ-18K
Color	Ivory White	Silver Color (U)	Black (K)

Upper Bracket



SZ-50NPT (For 1/2" NPT Pole)

Upper Bracket



Model	SZ-50-U	SZ-50U-U	SZ-50K-U
Color	Ivory White	Silver Color (U)	Black (K)

Pole

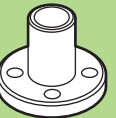


21mm

Steel Pole			
Model	POLE-800S21	POLE-300S21	POLE-100S21
Height	800mm	300mm	100mm

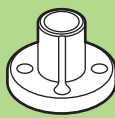
Aluminum Pole			
Model	POLE-800A21	POLE-300A21	POLE-100A21
Height	800mm	300mm	100mm

Mounting Bracket




SZ-016A (For φ21.7mm Pole)


Wall Mount Bracket



SZ-70-B (For φ21.7mm Aluminium Pole Only)



SZ-020 (For φ21.7mm Pole)

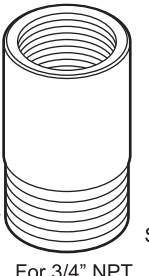


SZ-017 (For φ21.7mm Pole)

Pre-assembled

SZ-50T: Total height 323mm, pole diameter φ70mm.
 SZ-50L: Total height 318mm, mounting height 282mm, pole diameter φ70mm.

Adaptor



SZ-904 (For 3/4" NPT)

M22

LU7-V1

Sound Module



80dB at 1m

MP3 (4 Messages)

ø70

IP65

NPN/PNP
Open collector



Stackable sound module with high volume in all directions.

- Volume⁽¹⁾: Adjustable with internal control, high level of 80dB at 1m in all direction.
- Playback System⁽²⁾: High quality MP3, alarms, melodies or up to 4 messages in 32 seconds.
- Operating Terminal / Playback Sound: Selected by internal jumper placement.
- Conforms to the CE requirements.
- UL Listed (File No. E215660) for use with LU7-02 and LU7-02FB.

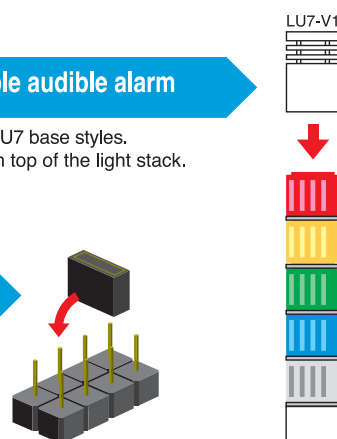
(1) Sound level may vary depending on type of sound.
(2) Sound data is pre-recorded per order at the factory.

Stackable audible alarm

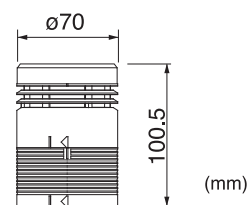
- Available for all LU7 base styles.
- Easily mounts on top of the light stack.

Selectable playback sound

· The jumper position determines the sound.



Dimensions



Head cover is supplied with the base unit.

LU7-V1 Type

Model	Rated Voltage	Power Consumption	Mass
LU7-V1	24V DC	3.5W	0.17kg

LU7-XE

LED Strobe Module



LED

ø70

IP65

NPN/PNP
Open collector

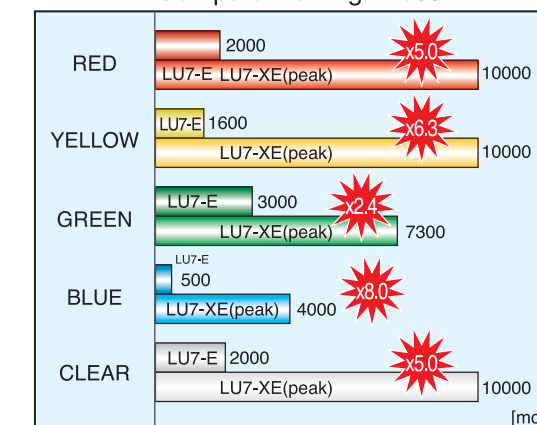


Stackable LED strobe module saves energy and requires low maintenance.

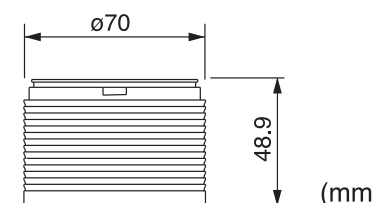
- Application⁽¹⁾: For use with the LU7 series signal tower.
- Lighting Pattern: Double-flash for a visually stunning display.
- LED: Super bright for enhanced visibility.
- Assembly: Stackable and interchangeable before or after installation.
- Conforms to the CE requirements.
- UL Listed (File No. E215660) for use with LU7-02 and LU7-02FB.

(1) For use with the LU7-02 and LU7-02FB bases only.

Comparative Brightness



Dimensions



LU7-XE Type

Color	Model	Rated Voltage	Power Consumption	Mass
Red	LU7-XE-R	24V DC	290mA	0.07kg
Amber	LU7-XE-Y	24V DC	290mA	0.07kg
Green	LU7-XE-G	24V DC	140mA	0.07kg
Blue	LU7-XE-B	24V DC	270mA	0.07kg
Clear/White	LU7-XE-C	24V DC	280mA	0.07kg

WE / WEP

Slim Wall-Mount Signal Tower



LED

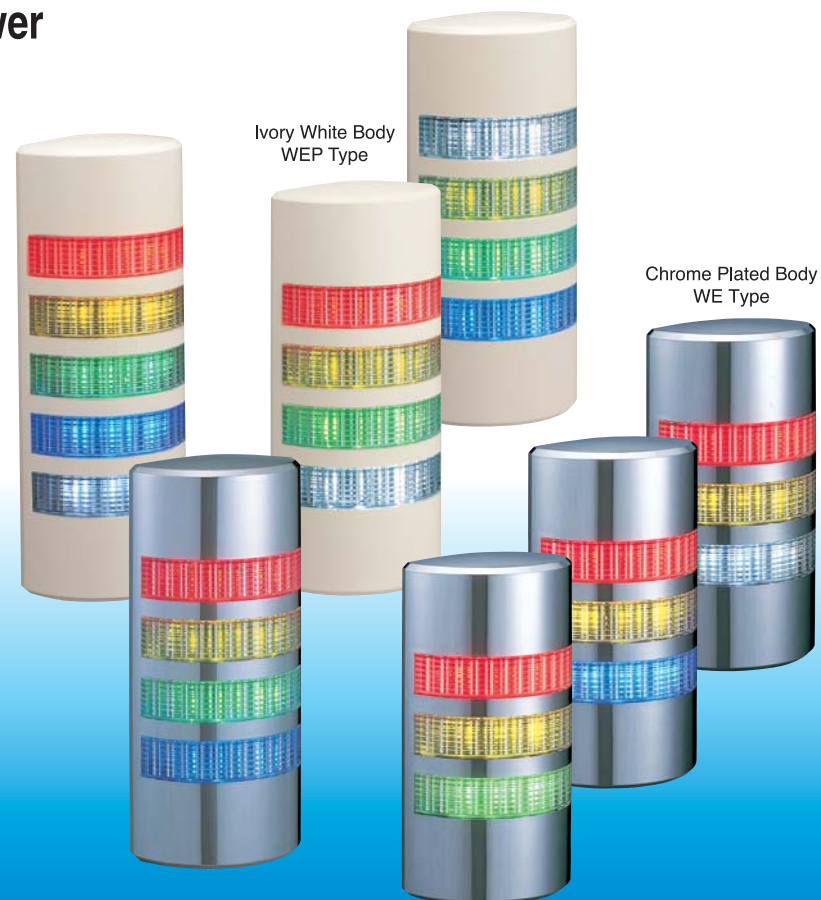


90dB at 1m (FB type)

Electronic Sound 2 (FB type)

IP65 (FB type: IP54)

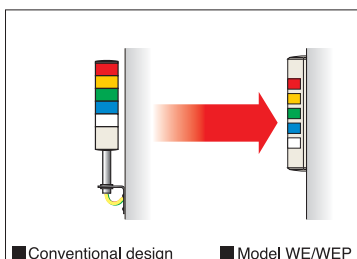
NPN/PNP Open collector



Ultra slim half-moon shaped Signal Tower offers seamless integration with most equipment.

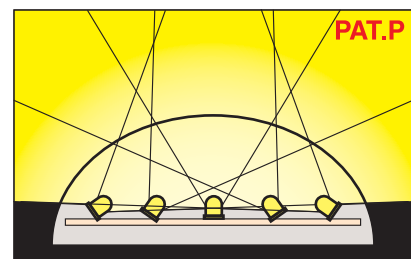
- Clear Vertical Cut Lens: For enhanced illumination over a wide perspective.
- FB type: Built-in audible alarm with 90dB at 1m.
- Installation: Vertical and horizontal.
- Body Color: Chrome plated or ivory white.
- Lens: Superior impact and heat resistant polycarbonate resin for superior durability and enhanced illumination.
- NPN/PNP Compatible: Direct connection to PLC (24V DC ONLY)
- Lighting Pattern: Flashing and Continuous.
- Dust-proof and waterproof IP65 (except for FB type: IP54).
- Available Colors: Red, Amber, Green, Blue, Clear/White.
- Conforms to the CE requirements.
- UL Recognized Component (File No. E215660).

37.5 mm Super-thin design !



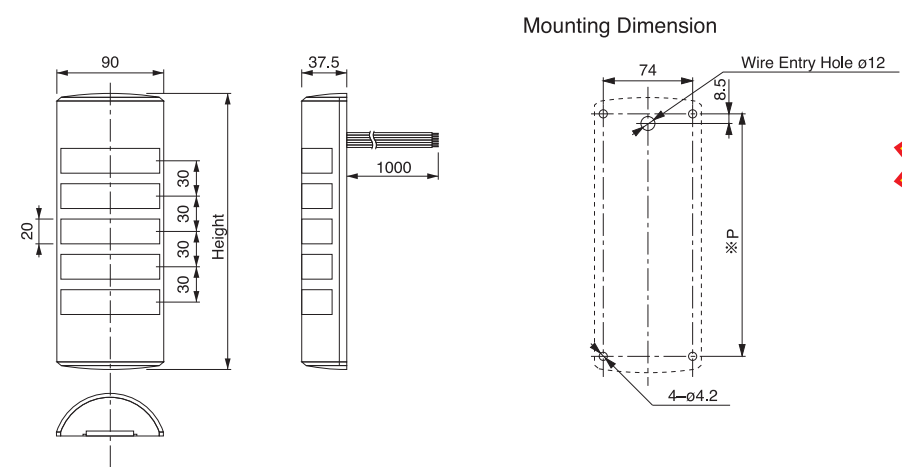
Patlite has perfected a 37.5mm-thin design that significantly enhances integration with the equipment as a built-in signal system.

New and exclusive LED lighting design



Patlite has created a revolutionary lighting design (patent pending) in which multiple LEDs project light across a broad peripheral area, ensuring equal intensity at the sides as well as the front. This design, with its side-projection technology, is a unique achievement in signal light design.

Dimensions



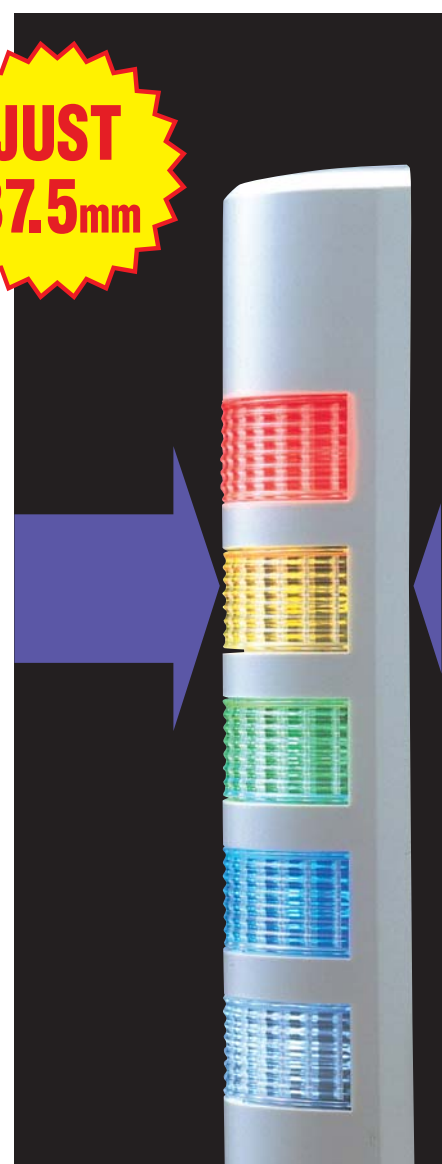
Height (mm)
3 Lights: 176
4 Lights: 206
5 Lights: 236

※ P (mm)
3 Lights: 150
4 Lights: 180
5 Lights: 210

JUST 37.5mm



IP65 construction is safe for installation in damp locations, dusty factories and outdoor environments.



Wiring Diagram

Note: See page 174 for wiring diagram

WE / WEP Type

Light System	Model	Rated Voltage	Power Consumption	Mass
3 Lights	WE(P)-302	24V AC/DC	1.7W	0.26kg
	WE(P)-302FB	24V AC/DC	2.7W	0.30kg
4 Lights	WE(P)-402	24V AC/DC	2.0W	0.31kg
	WE(P)-402FB	24V AC/DC	3.2W	0.35kg
5 Lights	WE(P)-502	24V AC/DC	2.7W	0.31kg
	WE(P)-502FB	24V AC/DC	3.7W	0.35kg

FB type: approx 60 flashes per minute

How to Order

WEP-302FB-RYG

Body color
WE: Chrome plated
WEP: Ivory white

Color
R: Red
Y: Amber
G: Green
B: Blue
C: Clear/White
Top to bottom

Stacks
3-5

Rated Voltage
02: 24V AC/DC

Type
Blank: Continuous light
FB: Continuous or flashing light with audible alarm

WME-A

Signal Tower



LED



90dB at 1m

Electronic Sound 2

W70 D80

IP65

(FB type: IP54)

NPN/PNP
Open collector



Exclusive wall-mount design saves space and enhances its integral appearance.

- FB type: Built-in audible alarm up to 90dB at 1m .
- Installation: Easy vertical and horizontal installation with mounting bracket.
- Interchangeable Modules: No re-wiring even after installation.
- Mount option: Compatible with household switch box (JISC 8336 with 82.5m pitch).
- Main body: Made of ABS resin.
- Lens: Superior impact and heat resistant polycarbonate resin for superior durability and illumination.
- NPN/PNP Compatible: 24V DC type ONLY.
- Available Colors: Red, Amber, Green, Blue, Clear/White.
- Conforms to the CE requirements.
- UL Recognized Component (File No. E215660).

Available by Special Order

- 1stack type.

Interchangeable Modules

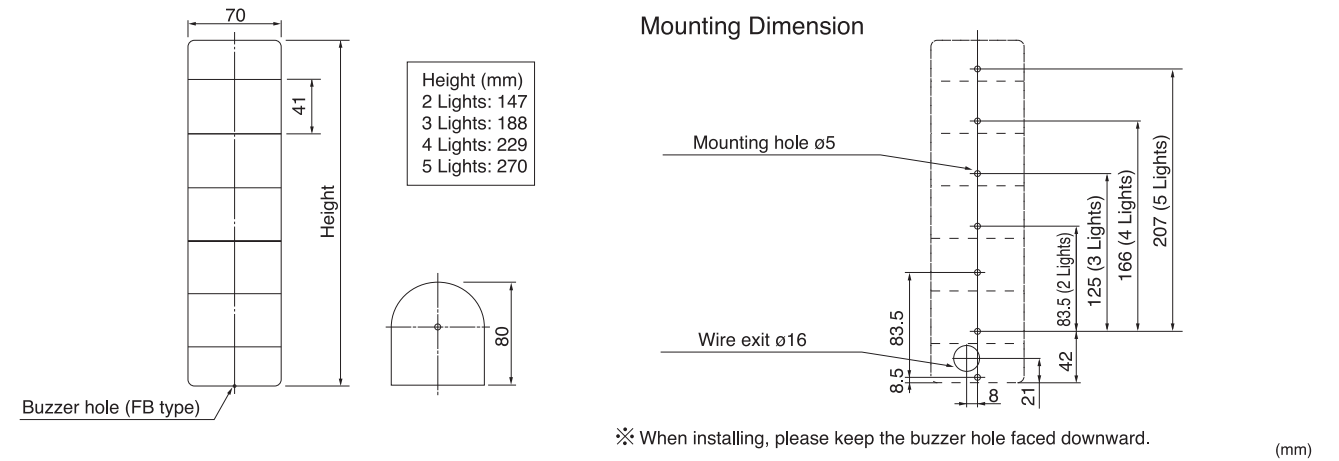
If the number of LED modules are changed, center shaft and mounting bracket must also be purchased.



Note: When the same colored modules are in one light tower, they will light simultaneously.

Individual module control for Single color is possible by special order.

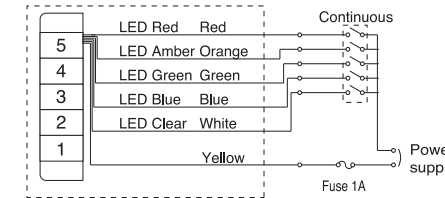
Dimensions



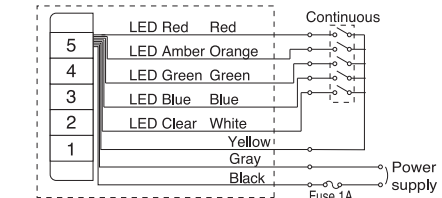
Wiring Diagram

WME-A

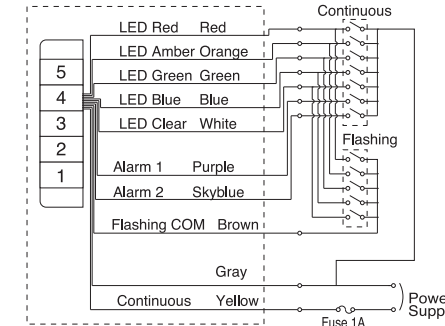
Continuous Lighting
24V AC/DC



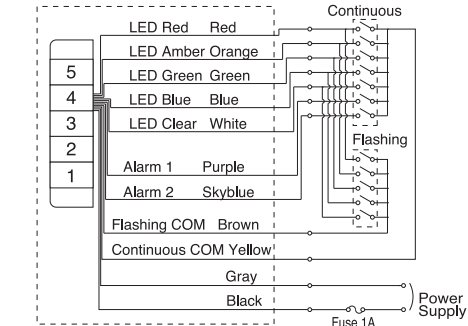
90~250V AC



Continuous or flashing light with audible alarm
24V AC/DC



90~250V AC



Signal line voltage and current per LED module

Model	Voltage Type	Signal Line Voltage	LED					Alarm	
			R	A	G	B	C	Signal Line Current	Inrush Current
WME-A	24V AC/DC	24V AC/DC	35mA	50mA	40mA	250mA			
	90~250V AC	24V DC							

Note: See page 175 for wiring diagram

WME-A Type

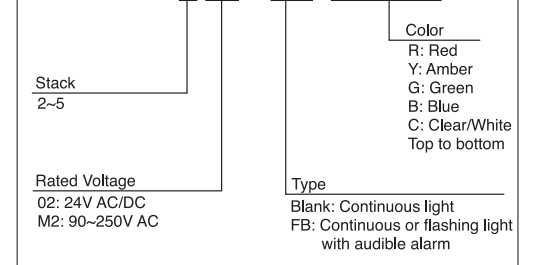
Light System	Model	Rated Voltage	Power Consumption
2 Lights	WME-202A	24V AC/DC	2.3W
	WME-2M2A	90~250V AC	5.2W(at 200V)
3 Lights	WME-302A	24V AC/DC	2.8W
	WME-3M2A	90~250V AC	6.6W(at 200V)
4 Lights	WME-402A	24V AC/DC	3.8W
	WME-4M2A	90~250V AC	8.6W(at 200V)
5 Lights	WME-502A	24V AC/DC	4.8W
	WME-5M2A	90~250V AC	10.6W(at 200V)

WM type: Bulb-T20 BA15D

FB type approx. 60 flashes per minute. ●: Custom order

How to Order

WME-402AFB-RYGB



LGE

Signal Tower

LED



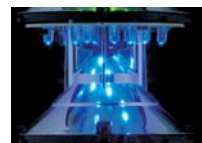
85dB at 1m
(FB type)

Electronic Sound 1
(FB type)

∅100

IP54

NPN/PNP
Open collector



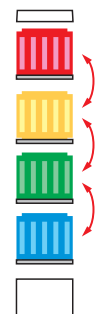
Triple Reflection system

Large Signal Tower featuring enhanced visibility and downward illumination, designed for large machines.

- PATLITE's large prism cut lens: For enhanced downward illumination (cut lens: $\Phi 100\text{mm} \times 60\text{mm}$ high).
- Newly developed triple-reflection system: For enhanced visibility and low power consumption.
- Lighting Pattern: Flashing and continuous.
- FB type: Built-in buzzer with volume up to 85dB at 1m.
- Installation: Direct mount.
- Interchangeable Modules: No re-wiring even after installation.
- Lens: Superior impact and heat resistant polycarbonate resin for superior durability and illumination.
- NPN/PNP compatible: 24V DC type; 100/220V AC compatible with NPN only.
- Available Colors: Red, Amber, Green, Blue and Clear/White.
- Conforms to the CE requirements (for 24V type).

Interchangeable LED modules

- Changeable color sequence: Easy to add / remove up to 4 colored modules even after installation.
- Note: LED modules of the same color within a signal tower will light up simultaneously.

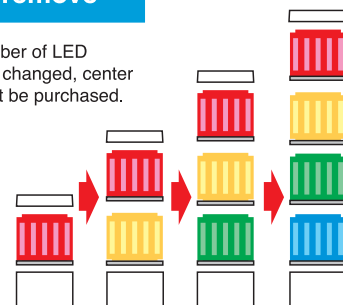


The wiring remains the same

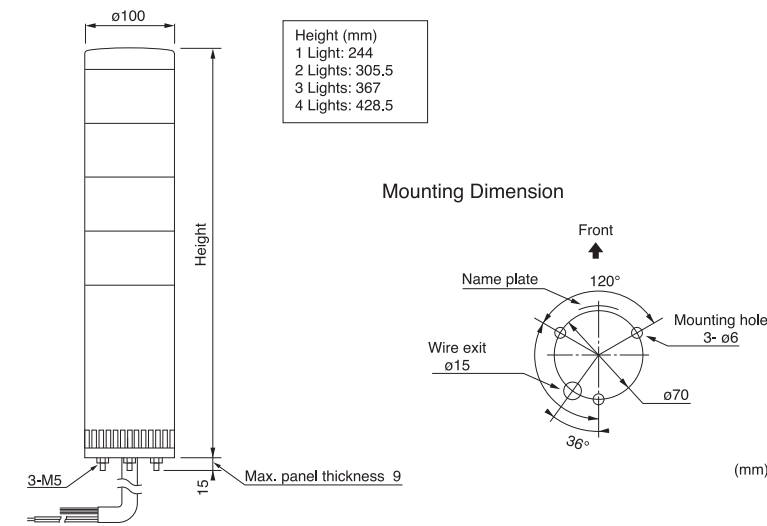
Each color of LED module corresponds to the lead wire color.

Easy to add and remove

If the number of LED module is changed, center shaft must be purchased.



Dimensions



"Super Bright" LED provides highest level of visibility.



RED



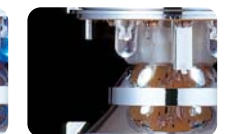
AMBER



GREEN



BLUE



CLEAR/WHITE

Wiring Diagram

Note: See page 173 for wiring diagram

LGE Type

Light System	Model	Rated Voltage	LGE Power Consumption
1 Light	LGE-102 / 102FB	24V AC/DC	2.5W
	LGE-110 / 110FB	100V AC	5.7W
	LGE-120 / 120FB	220V AC	
2 Lights	LGE-202 / 202FB	24V AC/DC	4.5W
	LGE-210 / 210FB	100V AC	8.2W
	LGE-220 / 220FB	220V AC	
3 Lights	LGE-302 / 302FB	24V AC/DC	6.5W
	LGE-310 / 310FB	100V AC	10.7W
	LGE-320 / 320FB	220V AC	
4 Lights	LGE-402 / 402FB	24V AC/DC	8.5W
	LGE-410 / 410FB	100V AC	13.2W
	LGE-420 / 420FB	220V AC	

FB type: approx. 60 flashes per minute.

How to Order (Product)

LGE-402FB-RYGB	
Stack 1~4	Color R: Red Y: Amber G: Green B: Blue C: Clear/White Top to bottom
Rated Voltage 02: 24V AC/DC 10: 100V AC 20: 220V AC	Type Blank: Continuous light FB: Continuous or flashing light with audible alarm

How to Order (Individual Units)

Light-Module

Light Unit	Color	Rated Voltage	Wattage
LGEM24-R	Red	24V AC/DC	2W
LGEM24-Y	Yellow		
LGEM24-G	Green		
LGEM24-B	Blue		
LGEM24-C	Clear		

Power Unit

Power Unit	Rated Voltage	Type Operation
LGEB-120	120V AC	Continuous
LGEB-24	24V AC/DC	
LGEB-120FB	120V AC	Continuous/Flashing with Audible Alarm option
LGEB-24FB	24V AC/DC	

Shaft Assembly

Part No.	Light- Modules per Base Unit
LGSHAFT-1	1
LGSHAFT-2	2
LGSHAFT-3	3
LGSHAFT-4	4

How to order (Example)

Three LED lights (Red, Yellow, Green) with flashing at input voltage of 120V AC

1. Power Unit: LGEB-120FB \times 1pce
2. Light Module: LGEM-24-R \times 1pce
LGEM-24-Y \times 1pce
LGEM-24-G \times 1pce

Note: LGEB contains a transformer that steps down the input voltage to 24V DC.

WSST

Manual Control Box



Complete HSST-312 Kit



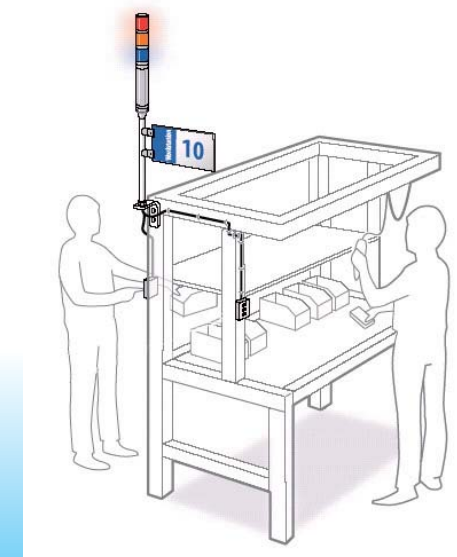
Control box

12inch mounting pole & bracket

OPTIONAL
Extension cable available in 10 ft. segments (DT-HSST-10).

HSST

Manual Indicating Light



LED



LED

Applications

- Lean manufacturing workstations
- Remote visual indication of line status for managers and line supervisors
- Safety and security applications
- Manual assembly operations
- Retail check stands
- Call centers



Tower lights, cables and poles are sold separately.

Applications

- Assembly workstations
- Safety and security applications
- Call centers
- Retail check stands
- Hospitals
- Airports



PATLITE's new WSST Control Box is the latest exciting product that offers all-in-one functionality as well as remote operation capability to meet the growing needs of the manufacturing sector and beyond.

FEATURES

- Universal manual control box for PATLITE visual alert LED light towers.
- Accommodate up to 5 LEDs (Red, Amber, Green, Blue and Clear).
- Optional sound alarm available (must purchase FB type).
- Each light module can be manually configured for "steady on" or "flashing" (must purchase FB type).
- Sturdy metal construction with 6 color coordinated push buttons.
- Various configurations available including all in-one and remote mounting capabilities.
- Very easy setup and operation. All necessary components are included in the package.

*Available soon

The HSST kit is a low cost complete turn-key solution for manually controlling a pre-assembled, pre-wired 3 stack light tower. The kit includes a 3 stack LED tower, pole, control box, brackets and AC adapter. Ideal for use in manual assembly operations where lean manufacturing practices are critical to the overall efficiency of the operation.

FEATURES

- HSST standard colors: red, yellow, and green.
- LED illuminating light offers maintenance-free operation.
- AC power adapter makes set-up easy in any location (UL Listed)
- Complete kit includes 3 LED, 50 mm diameter, signal tower in red/yellow/green with 4-foot cable, mounting brackets that fit standard cubicle partitions, and AC power adaptor.
- 120V AC power supply with 6 ft. cord length.
- 3 button switchbox with mounting screws.

Signal Light



NE-24

Signal Light



LED



ø57

IP65

NPN/PNP
Open collector



LED

ø100

IP65 With SZ-200A



Optional Rubber Gasket SZ-200A



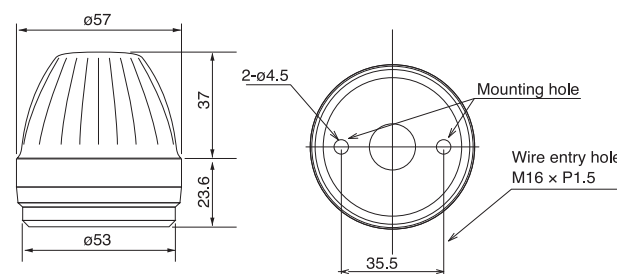
NE series LED Dome Indicator Light

The dome shape provides increased visibility and the LEDs provide years of maintenance-free operation.

- Enhanced Illumination : Use of long-life, super bright LED.
- Energy Efficient : Low power consumption.
- Maintenance-Free : High vibration resistant and no bulb replacement needed.
- Terminal Block : For easy wiring.
- Applications : Suitable for small machine tools, control panel, etc.
- Available colors : Red, Amber, Green, Blue, Clear/White.
- Conforms to the CE requirements.

Dimensions

NE-24 Type



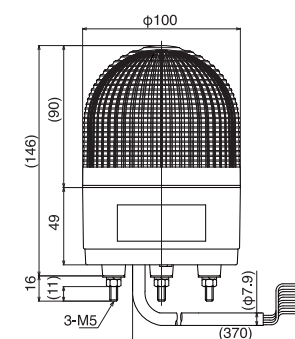
Model	NE-24				
Rated Voltage	24V DC (No polarity) NPN/PNP open collector				
Operating Voltage Range	21.6V ~26.4V DC				
Power Consumption	Red 0.63W	Amber 0.63W	Green 0.56W	Blue 0.53W	Clear/White 0.45W
Operating Temperature Range (Relative humidity)	-30°C~+ 50°C (Less than 90%)				
Mounting Place	Indoor & Outdoor				
Mounting Direction	Upright, Upside down & Horizontal				
Protection Rating	IP65				
Vibration Proof	19.6m/s ²				
Luminosity Intensity	Red 100mcd	Amber 400mcd	Green 340mcd	Blue 100mcd	Clear/White 460mcd
Mass	55g				

LED Multi Signal Light featuring three flashing patterns for diverse use.

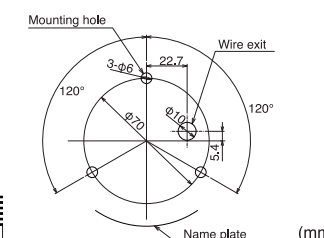
- Flashing Pattern: 3 Patterns...Simulated Rotation, Strobe, Blinking.
- Enhanced Illumination: Use of long-life, super bright LED.
- Maintenance-free: No bulb replacement needed.
- Energy Efficient: Low power consumption.
- Extended Product Life: Longer life without the use of a motor.
- Installation: Indoor: upright, inverted and sideways; Outdoors: upright only.
- Available Colors: Red, Amber, Green, Blue.
- Conforms to the CE requirements.
- UL Listed (File No. E215660).

Available by Special Order
· Silver Color Body.

Dimensions



Mounting Dimension



KHE Type

Model	Rated Voltage	Color	Power Consumption	Current	Luminosity
KHE-24	24V DC (no polarity)	Red	8.2W	340mA	10cd
		Amber	8.2W	340mA	15cd
		Green	10.1W	420mA	15cd
		Blue	21.6W	900mA	3cd

PEW / PES

Signal Light



LED



85dB at 1m
(PEW-B only)

Electronic Sound 1
(PEW-B only)

ø82

IP55*

NPN
Open collector

*PES: IP55 with rubber gasket SZ-210 (IP23 without SZ-210)

*PEW: IP54 (IP23 : Using the side wire exit)



Dome shape LED Signal Light featuring enhanced visibility and maintenance-free operation.

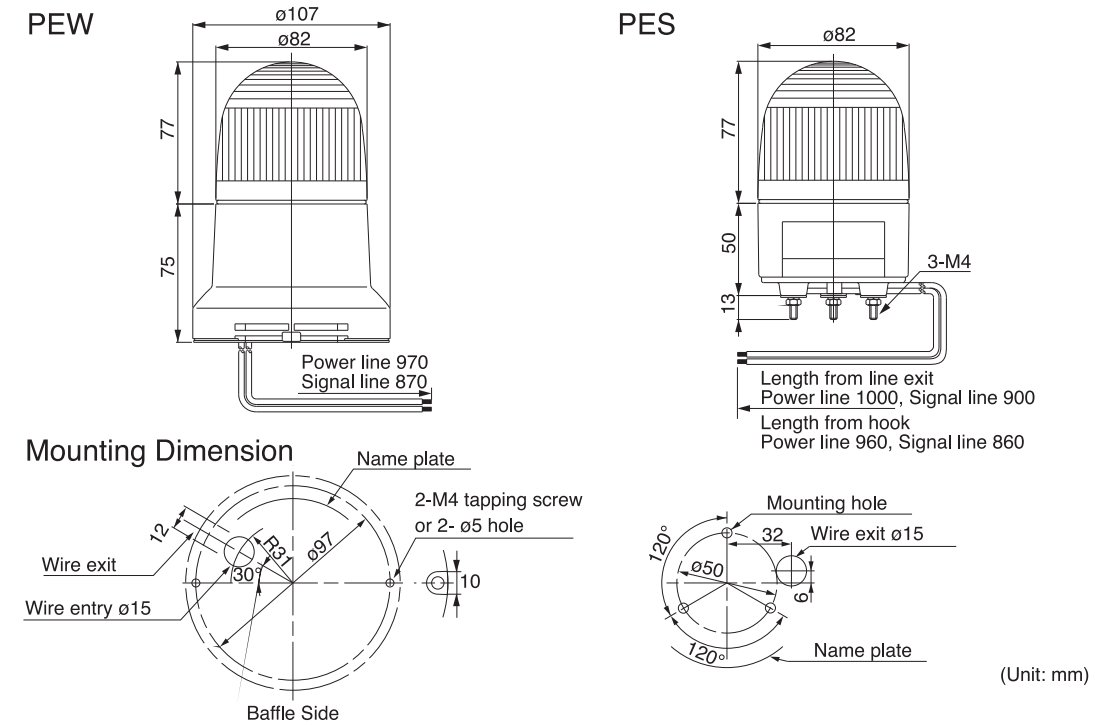
- Newly Developed Triple-reflection System: For enhanced visibility and low power consumption.
- Flashing Cycles: 3 patterns — 60/120/180 fpm, selectable by a switch.
- PEW-B type: Built-in audible alarm with adjustable volume up to 85dB at 1m.
- Maintenance-free: LED's power consumption is approx. half of incandescent bulb type (100V/200V AC).
- Installation: Indoors—upright, inverted, sideways; Outdoors—upright only.
- Dome: Superior weather resistant and light translucent acrylic resin.
- PEW: IP54 (IP23 : Using the side wire exit); PES: IP55 (with optional rubber gasket SZ-210, IP23 without SZ-210).
- Available Colors: Red, Amber, Green, Blue.
- Conforms to the CE requirements (for 24V type).
- UL Recognized Component (File No. E215660) (for 24V, 120V, 230V type only).

Available by Special Order

- Silver Color Body.
- IP65: PEW type only.

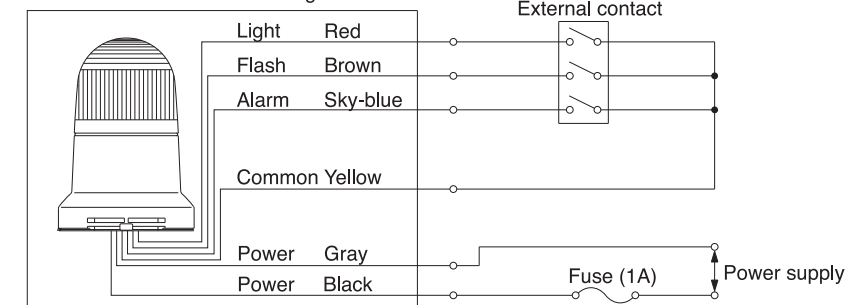


Dimensions (PEW, PES)



Wiring Diagram

All models have the same wiring.



* Skyblue line exists on buzzer type only.

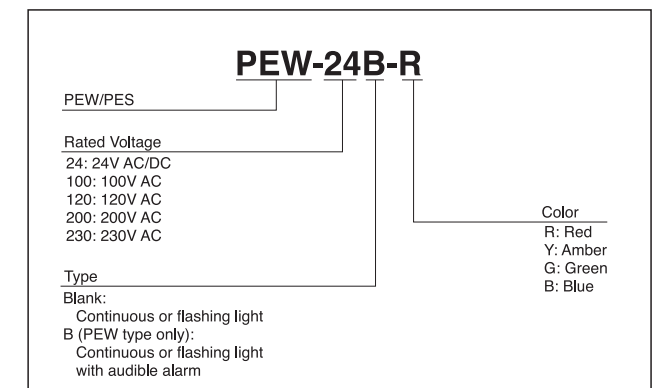
Transistor Operation Example

Transistor	NPN	Voltage proof	$V_c \geq 35V$
Current capacity	$I_c \geq 100mA$	Current leak	$I_L \leq 1mA$

PEW/PES Type

Model	Rated Voltage	Power Consumption	Flashes per minute	Mass			
PEW-24 R/Y G/B	24V AC/DC	2.5W	Approx. 180 times/minute	0.32kg			
PES-24 R/Y G/B		1.5W		0.24kg			
PEW-24B R/Y G/B		2.5W		0.34kg			
PEW-100 R/Y G/B		100V AC		5.8W	Approx. 120 times/minute	0.52kg	
PES-100 R/Y G/B	4.7W			0.43kg			
PEW-100B R/Y G/B	5.8W			0.54kg			
PEW-120 R/Y G/B	120V AC			4.9W		Approx. 60 times/minute	0.52kg
PES-120 R/Y G/B		4.7W		0.43kg			
PEW-120B R/Y G/B		4.9W		0.54kg			
PEW-200 R/Y G/B		200V AC		5.6W			Approx. 60 times/minute
PES-200 R/Y G/B	4.7W			0.43kg			
PEW-200B R/Y G/B	5.6W			0.54kg			
PEW-230 R/Y G/B	230V AC		5.3W	Approx. 60 times/minute			
PES-230 R/Y G/B		4.7W	0.43kg				
PEW-230B R/Y G/B		5.3W	0.54kg				

How to Order



PS / PSF

Signal Light



Bulb



ø82

IP55 With SZ-210



Optional Rubber Gasket SZ-210

KX

Signal Light



Xenon

ø100

IP55 With SZ-200A



Optional Rubber Gasket SZ-200A

Compact Signal Light featuring simple functionality suitable for small devices.

- Original Prism Cut Lens: For enhanced visibility and high illumination in every direction.
- Flashing Cycle: 60 flashes/min. for PSF type.
- Installation: Indoors—upright, inverted, sideways; Outdoors—upright only.
- Main Body: Superior impact and heat resistant ABS resin.
- Dome: Superior impact and heat resistant polycarbonate resin.
- Available Colors: Red, Amber, Green, Blue.
- Conforms to the CE requirements (for 24V type).

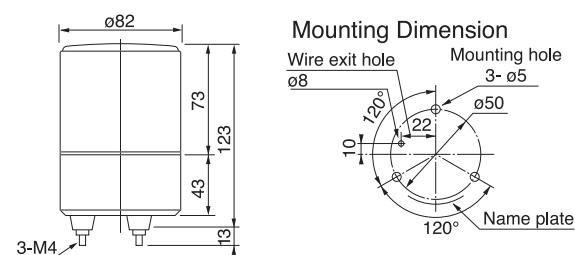
Xenon Signal Light featuring superior night-time visibility and adjustable flashing cycle.

- Newly Developed Prism Cut Lens: For bright illumination and improved visibility from all directions.
- Extended Bulb Life: Shock resistant xenon, even under severe vibration.
- Installation: Upright, inverted and sideways for indoors only.
- Main Body: Impact and heat resistant ABS resin.
- Lens: Superior impact and heat resistant polycarbonate resin for superior durability and light transmission.
- Superior Visibility: Intensive flashing using a xenon lamp (night-time visibility: 1,000m or more).
- Flashing Cycle: Adjustable between 30~90 times/minute.
- IP55 with the optional Rubber gasket SZ-200A (IP23 without SZ-200A).
- Available Colors: Red, Amber, Green, Blue.
- UL Recognized Component (File No. E215660) (for 24V, 120V, 230V type only).

Available by Special Order

- Silver Color Body.

Dimensions



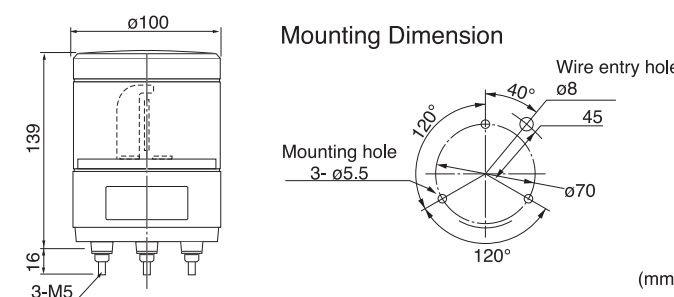
(mm)

PS / PSF Type

Model	Rated Voltage	Flashes per Minute	Bulb	No.	Mass
PS-12/PSF-12	12V AC/DC	60 times/minute (PSF type)	12V 10W	9	0.3kg
PS-24/PSF-24	24V AC/DC		24V 10W	10	

Bulb...12V/24V-G18 BA15S

Dimensions



(mm)

KX Type

Model	Rated Voltage	Power Consumption	Rush Current	Flashes per Minute
KX-12	12V DC	8W	—	30~90
KX-24	24V DC		—	
KX-100	100V AC	4W	10A	
KX-120	120V AC		21A	
KX-220	220V AC			
KX-230	230~240V AC			

Inrush current of this product is very high. Please check the outer contact capacity.

XP

Signal Light



Xenon



Ø162

IP23

KPE

Signal Light



LED

Ø162

IP23

Drip-proof

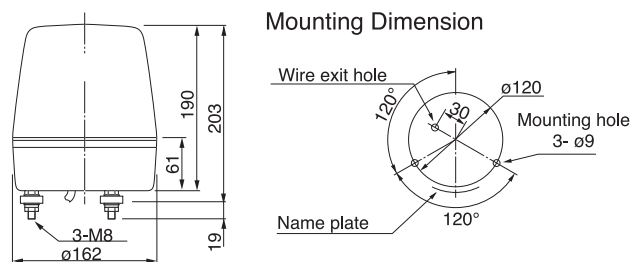
Corrosion-proof plastic Signal Light with triple flashing.

- Newly Developed Prism Cut Lens: For bright illumination and improved visibility from all directions.
- Superior Visibility: Intensive flashing using a xenon lamp (night-time visibility: 1,000m or more).
- Extended Bulb Life: Shock resistant xenon, even under severe vibration.
- Installation: Indoors—upright, inverted, sideways; Outdoors—upright only.
- Main Body: Impact and heat resistant ABS resin.
- Lens: Superior weather resistant and light translucent AS resin.
- Available Colors: Red, Amber, Blue.

Revolving Warning Light featuring Corrosion-proof plastic, LED, adjustable flashing cycles, and maintenance-free design.

- Enhanced Illumination: Special high intensity illumination design for improved light diffusion, ensuring sufficient brightness, even outdoors.
- Flashing Cycle: Adjustable flashes between 50~200 times/minute with internal adjustment.
- Extended Bulb life: No bulb replacement needed with long-life LED, perfect for "hard-to-service" locations.
- Installation: Indoors—upright, inverted, sideways; Outdoors—upright only.
- No Motor: No more worn-out motor within electronic rotating light system.
- Main Body: Weather resistant special resin.
- Dome: Superior weather resistant and light translucent acrylic resin.
- Stainless Mounting Bolts: Corrosion-proof screws, even in marine environment.
- Available Colors: Red, Amber.

Dimensions

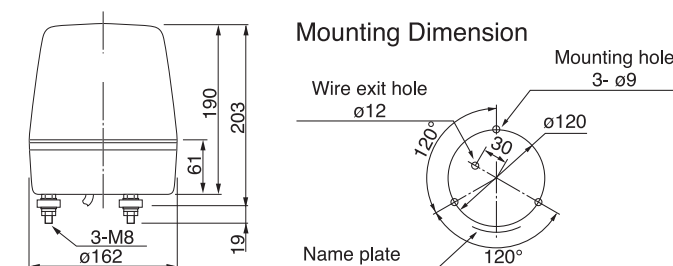


XP Type

Model	Rated Voltage	Current	Flashes per Minute	Mass
XP-12	12V DC	1.4A	110	1.3kg
XP-24	24V DC	0.7A		
XP-100	100V AC	0.4A		
XP-220	220V AC	0.2A		1.2kg

Inrush current of this product is very high. Please check the external contact capacity.

Dimensions



KPE Type

Model	Rated Voltage	Current	Flashes per Minute	Mass
KPE-100	100V AC	50mA/100mA	50~200 (revolution)	1.5kg
KPE-220	220V AC	30mA/50mA	60 (flashes)	

Operating Temperature Range: -30°C ~ +60°C

Mounting hole 3- Ø9 (mm)

Revolving Warning Light



SKHE / SKHEB

1 chip super bright LED Revolving Warning Light



90dB at 1m
(SKHEB type)

LED



ø118

IP23



RKE / RKEB / RHE / RHEB

1 chip super bright LED Revolving Warning Light



LED

ø100

IP55 With SZ-200A
(RKEB/RHEB type)

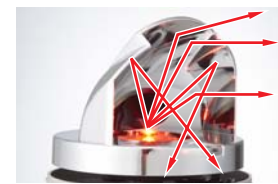


Optional Rubber Gasket SZ-200A

Compact LED revolving warning light featuring enhanced illumination with 1 chip super bright LED and new high dispersion reflection system.

- Colors available : Red, Amber, Green, Blue.
- SKHEB series has an internal alarm (hi-pitch tone 90dB at 1m) that sounds with light operation.
- Compact Motor : High durability and energy-efficient.
- Energy-Efficient : Maintenance-free 1 chip super bright LED.
- Dome lens : Made of acrylic resin with superior weather resistance and light transluence.
- Installation : Indoors-Upright, inverted, sideways; Outdoors-upright only.
- Conforms to the CE requirements (for 12V, 24V type only).

Newly developed reflector for LED revolving warning light.

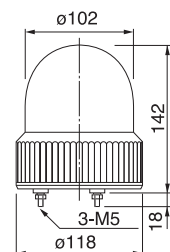


PATLITE LED revolving warning light uses a unique (patented) reflecting system solely designed for these models. Even though the dispersion effect of the LED unit is less than an incandescent bulb, PATLITE LED revolving warning light creates the equivalent dispersion effect with the light reflector.

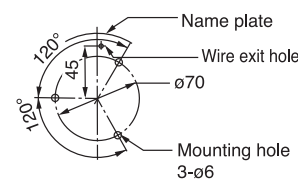


The newly designed reflector enables not only upward and sideway light reflections, but also downward light reflection that is not achieved by incandescent bulb type revolving warning lights. PATLITE LED revolving warning light is suitable for applications where high visibility from below is required.

Dimensions



Mounting Dimensions



(unit: mm)

SKHE Type

Size (mm)	Model	Rated Voltage	Current Consumption	Rotations per Minute	Mass
ø118	SKHE/SKHEB-12	12V DC	0.25A	120	0.4kg
	SKHE/SKHEB-24	24V DC	0.16A	120	0.4kg
	SKHE/SKHEB-100	100V AC	0.04A	120	0.6kg
	SKHE/SKHEB-200	200V AC	0.02A	120	0.6kg

Compact LED revolving warning light featuring enhanced illumination with 1 chip super bright LED and new dispersion reflection system.

- Colors available: Red, Amber, Green, Blue.
- RHEB/RKEB series has an internal alarm (hi-pitch tone 90dB at 1m) that sounds with light operation.
- Compact Motor: High durability and energy-efficient.
- Energy-Efficient: Maintenance-free 1 chip super bright LED.
- Dome lens: Impact and heat resistant polycarbonate resin.
- Main Body: Impact and heat resistant ABS resin.
- Terminal Block: For easy wiring.
- Conforms to the CE requirements (for 12V, 24V type only).

Newly developed reflector for LED revolving warning light.

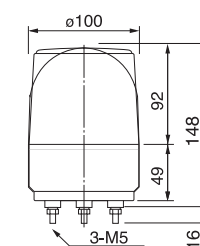


PATLITE LED revolving warning light uses a unique (patented) reflecting system solely designed for these models. Even though the dispersion effect of the LED unit is less than an incandescent bulb, PATLITE LED revolving warning light creates the equivalent dispersion effect with the light reflector.

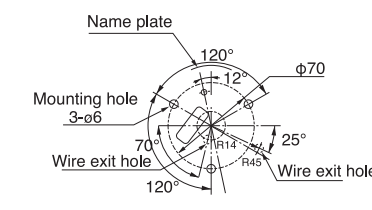


The newly designed reflector enables not only upward and sideway light reflections, but also downward light reflection that is not achieved by incandescent bulb type revolving warning lights. PATLITE LED revolving warning light is suitable for applications where high visibility from below is required.

Dimensions



Mounting Dimensions



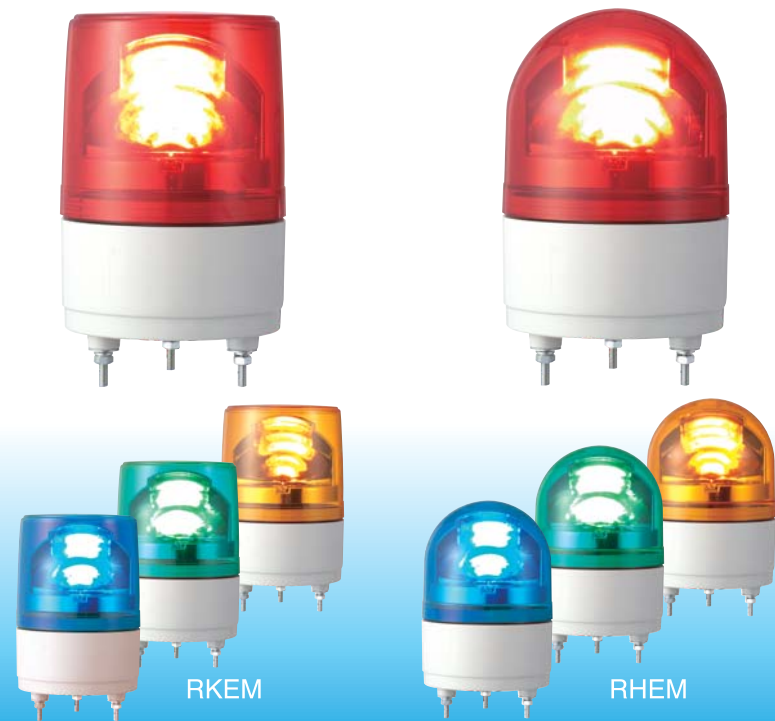
(unit: mm)

RKE/RHE Type

Size (mm)	Model	Rated Voltage	Current Consumption	Rotations per Minute	Mass
ø100	RKE/RKEB-12 RHE/RHEB-12	12V DC	0.25A	120	0.4kg
	RKE/RKEB-24 RHE/RHEB-24	24V DC	0.16A	120	0.4kg
	RKE/RKEB-100 RHE/RHEB-100	100V AC	0.04A	120	0.6kg
	RKE/RKEB-200 RHE/RHEB-200	200V AC	0.02A	120	0.6kg

RHEM/RKEM

1 chip super bright LED Revolving Warning Light



LED



∅100

IP55 With SZ-200A

RKEM

RHEM



Optional Rubber Gasket SZ-200A



Optional Rubber Gasket SZ-210

RLE

Revolving Warning Light



LED

∅82

IP55 With SZ-210

Drip-proof

Compact LED revolving warning light featuring enhanced illumination with 1 chip super bright LED and new dispersion reflection system.

- Colors available: Red, Amber, Green, Blue.
- Compact Motor: High durability and energy-efficient.
- Energy-Efficient: Maintenance-free 1 chip super bright LED.
- Dome lens: Impact and heat resistant polycarbonate resin.
- Main Body: Impact and heat resistant ABS resin.
- Terminal Block: Added for or easy wiring.
- Conforms to the CE requirements (for 12V, 24V type only).

Newly developed reflector for LED revolving warning light.



PATLITE LED revolving warning light uses a unique (patented) reflecting system solely designed for these models. Even though the dispersion effect of the LED unit is less than an incandescent bulb, PATLITE LED revolving warning light creates the equivalent dispersion effect with the light reflector.

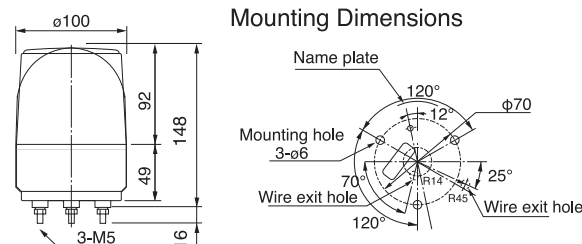


The newly designed reflector enables not only upward and sideways light reflections, but also downward light reflection that is not achieved by incandescent bulb type revolving warning lights. PATLITE LED revolving warning light is suitable for applications where high visibility from below is required.

LED Signal Light featuring energy-saving and enhanced illumination with LED integrated reflection system.

- LED Integrated Reflection System: For enhanced illumination.
- Compact Motor: High durability and energy-efficient.
- Energy-Efficient: Maintenance-free LED.
- Installation: Indoors—upright, inverted, sideways; Outdoors—upright only.
- Main Body: Impact and heat resistant ABS resin.
- Dome: Superior impact and heat resistant polycarbonate resin.
- Available Colors: Red, Amber, Green.

Dimensions

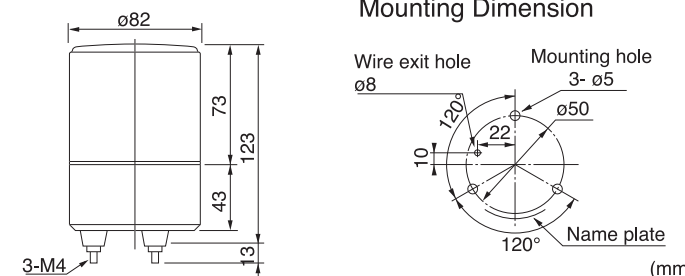


(unit: mm)

RKE/RHE Type

Size (mm)	Model	Rated Voltage	Current Consumption	Rotations per Minute	Mass
∅100	RKEM-12/24 RHEM-12/24	12V DC 24V DC	0.2A(12V DC) 0.14A(24V DC)	120	0.4kg
	RKEM-M2 RHEM-M2	100V AC~ 200V AC	0.02A~0.06A	120	0.4kg

Dimensions



RLE Type

Model	Rated Voltage	Power Consumption	Rotations per Minute	Mass
∅RLE-12	12V DC	1.7W MAX	120	0.4kg
RLE-24	24V DC	3.9W MAX		0.4kg
RLE-100	100V AC	2W MAX	120	0.6kg
RLE-220	220V AC	2W MAX		0.6kg

©: Special Order

RLR

Revolving Warning Light



LED



∅162

IP66

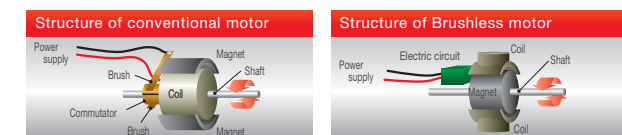
Ideal for forklift, material handling equipment and a great variety of applications.

- RLR complies with the RoHS Directive.
- Color : Red Amber Green Blue
- Conforms to the CE requirements (for 12V, 24V, 48V type)

LED + Brushless Motor + Bearing Mechanism

Long Life

The RLR has many advantages compared to a rotating beacon with incandescent bulb and standard motor. The LEDs last approximately 20 times to 40 times longer than an incandescent bulb. The combination of the brushless motor and bearing mechanism allows the RLR to operate from 8,000 hrs to 10,000 hrs, compared to 5,000 hrs for other rotating beacons.



Vibration Resistance
※Except RLR-M2



High Visibility



High Protection

IP66 TEST PROCEDURE

- ① IP66=Water is sprayed for at least 3 minutes, at a flow rate of 100 L/min, from a distance of 2.5 m to 3.0 m, from a 12.5mm diameter jet hose nozzle, and from all directions - 360°
- ② IP6X=Unit is tested under-pressure in a dust chamber for 8 hours.

nModel Code

Rated Voltage
O4 : 48V DC
M1 : 12/24V DC
M2 : 90V AC~250V AC

RLR-04-P-R

Color
R : Red G : Green
Y : Amber B : Blue

Mounting Dimensions
Blank : ∅140
P : ∅120

Typical Vibration Values

2G (19.6m/s²)



Passenger Car

4.5G (44.1m/s²)



Construction Machinery

7G (68.6m/s²)



Emergency Vehicle

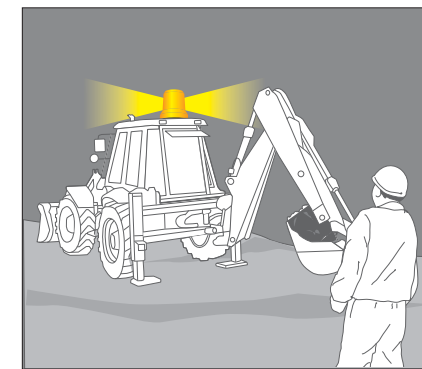
11G (107.8m/s²)



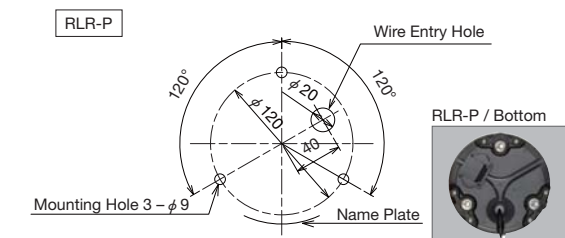
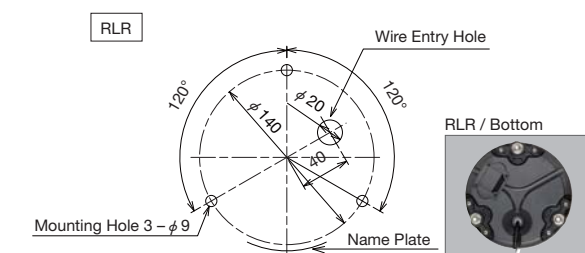
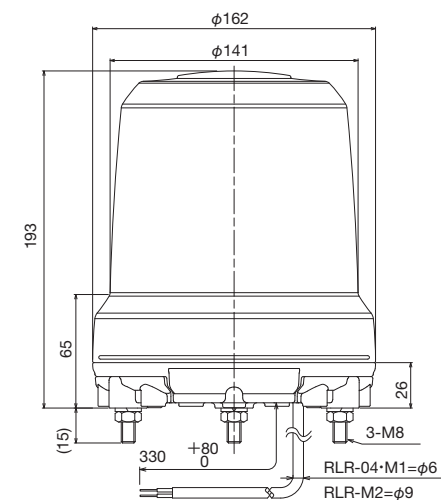
Dump Truck

Application Examples

Construction Equipment, Forklift, Signboard, Public Facility, etc



Dimensions



mm

RLR Type

Model	Rated Voltage	Operating Voltage Range	Vibration Resistance	Operating Temperature Range	Dome	Mass
RLR-M1	12/24V DC	9.5~15V DC	110m/s ² (11G)	-30°C~+70°C	-R (Red) -Y (Amber) -G (Green) -B (Blue)	1.0kg
RLR-04	48V DC	20~30V DC				
RLR-M2	90~250V AC	90~250V AC	45m/s ² (4.5G)	-10°C~+50°C		1.06kg

RU / RS

Revolving Warning Light



RU

RS

Optional Rubber Gasket SZ-210

Bulb



ø82

IP55 With SZ-210

RH-A / RK-A

Revolving Warning Light



With optional rubber gasket



Optional Rubber Gasket SZ-200A



Bulb



Terminal

90dB at 1m
(RHB and RKB Types)

Electronic Sound 1
(RHB and RKB Types)

ø100

IP55 With SZ-200A

Compact Revolving Warning Light perfectly designed for small devices.

- Integral Rotating Parabolic Reflector: For enhanced visibility from a distance.
- Extended Bulb Life: Vibration resistant automobile bulb.
- Installation: Indoors—upright, inverted, sideways; Outdoors—upright only.
- Main Body: Impact and heat resistant ABS resin.
- Dome: Superior impact and heat resistant polycarbonate resin.
- Available Colors: Red, Amber, Green, Blue.
- Conforms to the CE requirements (for 12V, 24V type).



RUP

Available by Special Order

- Silver Color Body.
- RUP series furnished with mounting pole and bracket.

Compact Revolving Warning Light featuring high durability and easy wiring with terminal block.

- Integral Rotating Parabolic Reflector: For enhanced visibility from a distance.
- Extended Bulb Life: Vibration-resistant automobile bulb.
- Built-in Alarm: Built-in audible alarm up to 90dB at 1m for RHB/RKB.
- Installation: Indoors—upright, inverted, sideways; Outdoors—upright only.
- Terminal Block: Added for easy wiring.
- Main Body: Impact and heat resistant ABS resin.
- Dome: Superior impact and heat resistant polycarbonate resin.
- Available Colors: Red, Amber, Green, Blue.
- Model AUL is equipped with SZ-200A rubber gasket.
- Conforms to the CE requirements (for 12V, 24V type only).
- UL Listed (for 12V, 24V, 120V, 240V type)

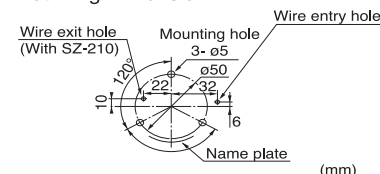
Available by Special Order (RH type)

- Silver Color Body.

Dimensions



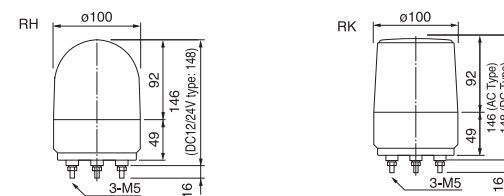
Mounting Dimension



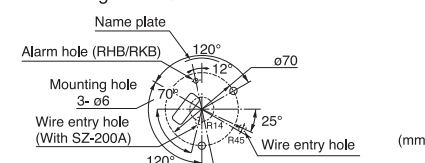
RU/RS Type

Model	Rated Voltage	Current	Rotations per Minute	Bulb	Mass			
					No.	RU/RS RUP		
RU/RS-12	12V DC	0.5A	120	12V6W	18	0.4kg		
RU/RS-24	24V DC	0.3A		24V6W	19	0.8kg		
RU/RS-100	100V AC	0.1A		12V6W	18	0.6kg	1.0kg	
RU/RS-120	120V AC							
RU/RS-220	220V AC	0.05A		24V6W	19	0.4kg	0.8kg	
RU/RS-240	240V AC							
©RU/RS-24AC	24V AC	0.3A						
Bulb: G14 BA9S							©: Special Order	

Dimensions



Mounting Dimension



RH-A / RK-A Type

Model	Rated Voltage	Current	Rotations per Minute	Bulb		Mass
				No.	No.	
RH/RHB/RK/RKB-12A (UL)	12V DC	0.8A	170	12V10W	9	0.4kg
RH/RHB/RK/RKB-24A (UL)	24V DC	0.5A		24V10W	10	
RH/RHB/RK/RKB-100A (UL)	100V AC	0.065A		12V5W	12	0.6kg
RH/RHB/RK/RKB-120A (UL)	120V AC	0.1A				
RH/RHB/RK/RKB-200A	200V AC	0.03A				
RH/RHB/RK/RKB-240A (UL)	240V AC	0.05A				
Bulb: G18 BA15S						

SKH-EA

Revolving Warning Light

Bulb



∅100

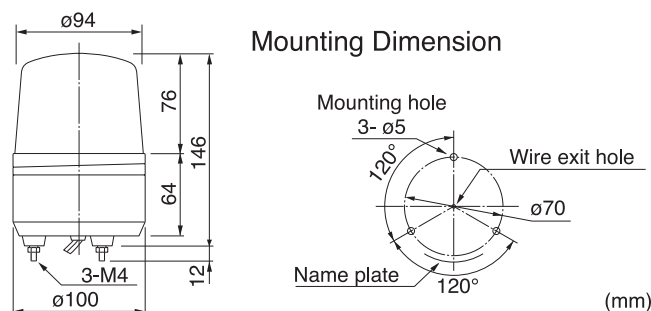
IP23



Best-selling Revolving Warning Light for wide range of applications.

- Integral Rotating Parabolic Reflector: For enhanced visibility from a distance.
- Extended Bulb Life: Vibration-resistant automobile bulb.
- Installation: Indoors—upright, inverted, sideways; Outdoors—upright only.
- Dome: Superior weather resistant and light translucent acrylic resin.
- Available Colors: Red, Amber, Green, Blue.
- Conforms to the CE requirements (for 12V, 24V type only).

Dimensions



SKH-EA Type (Beige Body)

USA Version							
Model	Rated Voltage	Current	Rotations per Minute	Bulb	No.	Mass	
SKH-12EA	12V DC	0.8A	170	12V10W	9	0.4kg	
SKH-24EA	24V DC	0.5A		24V10W	10		
SKH-120EA	120V AC	0.07A		12V5W	12		0.6kg
Bulb: G18 BA15S							

SKH-EA Type

Model	Rated Voltage	Current	Rotations per Minute	Bulb	No.	Mass	
SKH-12EA	12V DC	0.8A	170	12V10W	9	0.4kg	
SKH-24EA	24V DC	0.5A		24V10W	10		
SKH-100EA	100V AC	0.065A		12V5W	12		0.6kg
SKH-200EA	200V AC	0.03A					
Bulb: G18 BA15S							

WH-A/WK-A

Revolving Warning Light

Bulb

90dB at 1m
(WHB-A type)

Electronic Sound 1
(WHB-A type)

∅100

IP54
(WHB: IP23)



Wall-mount Revolving Warning Light featuring easy wiring with terminal block.

Easy to attach to an electrical box and the terminal block allows easy wiring.



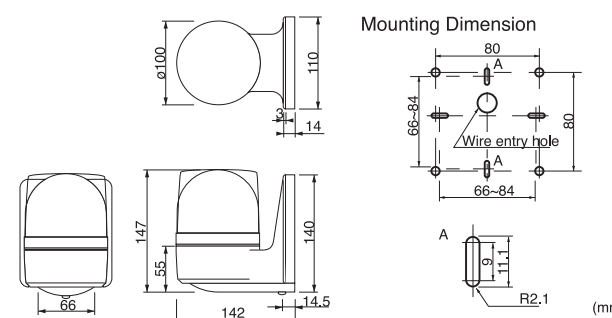
Installation in various directions is available for indoor use.



When installing the WHB, please keep its buzzer outlet faced downward.

- Built-in Alarm: Audible sound volume up to 90dB at 1m, synchronized with light.
- Extended Bulb Life: Vibration-resistant automobile bulb.
- Installation*: Indoors, Outdoors—upright, inverted, sideways.
- Terminal Block: For easy wiring.
- Main Body: Impact and heat resistant ABS resin.
- Dome: Superior impact and heat resistant polycarbonate resin.
- Compact Motor: Higher durability and energy-efficient.
- Available Colors: Red, Amber, Green, Blue.
- Conforms to the CE requirements (for 12V, 24V type only).
- * WHB type: upright only (outdoors).

Dimensions



WH-A/WK-A Type

Model	Rated Voltage	Current	Rotations per Minute	Bulb	No.	Mass	
WH-12A/WK-12A	12V DC	1A	170	12V10W	9	0.55kg	
WH-24A/WK-24A	24V DC	0.5A		24V10W	10		0.55kg
WH-100A/WK-100A	100V AC	0.07A	170	12V5W	12	0.75kg	
WH-120A/WK-120A	120V AC	0.08A					
WH-240A/WK-240A	240V AC	0.04A					
WHB-24A/WKB-24A	24V DC	0.5A	170	24V10W	10	0.55kg	
WHB-100A/WKB-100A	100V AC	0.07A		170	12V5W		12
WHB-120A/WKB-120A	120V AC	0.07A					
WHB-200A/WKB-200A	200V AC	0.04A					
Bulb: G18 BA15S							

SKH-A

Revolving Warning Light



Bulb



90dB at 1m
(SKHB type)

Electronic Sound 1
(SKHB type)

∅118

IP56 (SKH-SA type)
(others: IP23)

SKP-A

Revolving Warning Light



Bulb

∅138

IP23

Corrosion-proof plastic Revolving Warning Light for wide range of applications.

- Integral Rotating Parabolic Reflector: For enhanced visibility from a distance.
- Extended Bulb Life: Vibration-resistant automobile bulb.
- Built-in Alarm: Audible sound up to 90dB at 1m, synchronized with light function.
- Installation: Indoors—upright, inverted; Outdoors—upright only.
- Dome: Superior weather resistant and light translucent acrylic resin.
- Available Colors: Red, Amber, Green, Blue, Purple.
- Conforms to the CE requirements (for 12V, 24V type only).

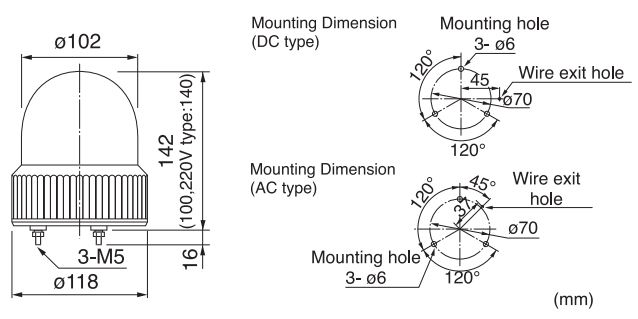
SKH-SA

- Installation: Indoors—upright, inverted.

Environment resistant and corrosion-proof Revolving Warning Light featuring silent and stable rotation.

- Rotary Mechanism: Gear-driven, for stable rotation under vibration.
- Installation: Indoors—upright, inverted, sideways; Outdoors—upright only.
- Main Body: Melamine baked finish with corrosion-proof stainless steel (SUS 304) lens mounting fixture.
- Dome: Superior impact and heat resistant polycarbonate resin.
- Available Colors: Red, Amber, Green, Blue.
- Conforms to the CE requirements (for 12V DC, 24V DC, 48V DC type)

Dimensions

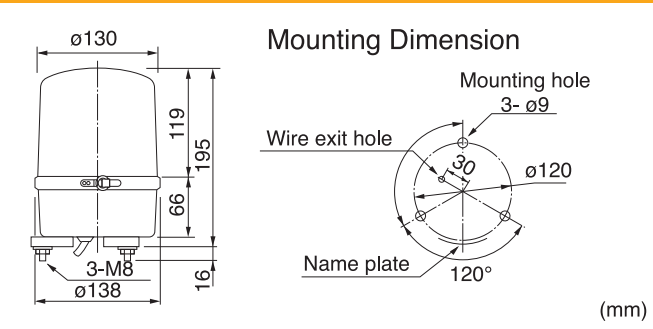


SKH-A Type

Model	Rated Voltage	Current	Rotations per Minute	Bulb	No.	Mass
SKH-101A/SKHB-12A	12V DC	0.8A	170	12V10W	9	0.4kg
SKH-102A/SKHB-24A	24V DC	0.5A		24V10W	10	
SKH-110A/SKHB-100A	100V AC	0.065A		12V5W	12	0.6kg
SKH-112A/SKHB-120A	120V AC	0.07A				
SKH-120A/SKHB-200A	200V AC	0.03A				
SKH-102SA	24V DC	0.5A				
SKH-110SA	100V AC	0.1A		12V5W	12	0.6kg

Bulb...G18 BA15S

Dimensions



SKP-A Type

Model	Rated Voltage	Current	Rotations per Minute	Bulb	No.	Mass
SKP-101A	12V DC	2.6A	140	12V35W	1	0.8kg
SKP-102A	24V DC	1.2A		24V35W	2	
SKP-104A	48V DC	0.8A		48V35W	5	0.9kg
SKP-110ADC	100V DC	0.35A	120	120V40W	36	
SKP-110A	100V AC	0.3A		120V40W	6	1.0kg
SKP-120A	200V AC	0.13A		220V30W	37	

Bulb...12V/24V · RP35 BA15S 48V/120V/220V · RP35 BA15D ©: Special order

KP-A

Revolving Warning Light



Bulb



∅162

IP23

SKHB-1006D

Revolving Warning Light



Bulb

Electronic Sound 1

∅162

IP23

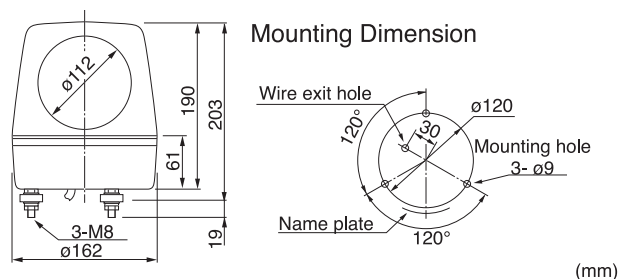
Corrosion-proof plastic Revolving Warning Light for a wide range of applications.

- Integral Rotating Parabolic Reflector: For enhanced visibility from a distance.
- Extended Product Life: Vibration resistant and reliable operation even under severe cold environment (-30°C).
- Installation: Indoors—upright, inverted, sideways; Outdoors—upright only.
- Main Body: Special UV and water-resistant resin.
- Dome: Superior weather resistant and light translucent acrylic resin.
- Mounting Bolts: Drip-proof and rust-free stainless steel bolts.
- Available Colors: Red, Amber, Green, Blue.
- Conforms to the CE requirements (for 24V type).

Portable Revolving Warning Light with dry cell battery.

- Built-in Alarm: Operation selectable with external switch for light rotation with buzzer or light rotation only (solenoid buzzer sound).
- Battery Life: SUM-1 × 5: about 4 hours; LR20 × 5: about 15 hours.
- Installation: Upright only.
- Dome: Superior weather resistant and light translucent acrylic resin.
- 1006MA type: includes a powerful magnet for secure placement.
- Available Colors: Red, Amber.

Dimensions

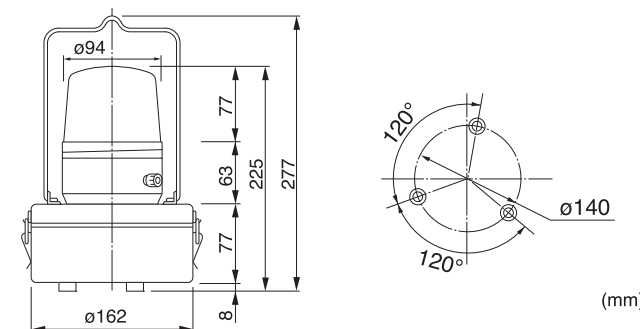


KP-A Type

Model	Rated Voltage	Current	Rotations per Minute	Bulb	No.	Mass
KP-24A	24V DC	1.2A	140	24V35W	2	1.0kg
KP-100A	100V AC	0.3A		120V40W	6	1.2kg
KP-120A	120V AC	0.4A	120	220V30W	37	1.2kg
KP-200A	200V AC	0.13A				

Bulb: 24V · RP35 BA15S 120V/220V · RP35 BA15D

Dimensions



SKHB-1006A Type

Model	Rated Voltage	Current	Rotations per Minute	Bulb	No.	Mass
SKHB-1006D	SUM-1x5	0.6A	170	6V3W	8	1.8kg
SKHB-1006MD						1.9kg

Bulb: G18 BA15S

SKL-A

Revolving Warning Light



Melamine Coated
Finish Steel Body
SKL-CA Type



Stainless Steel Body
SKL-SA Type

Bulb



ø162

IP23

HP

Revolving Warning Light



Halogen

ø182

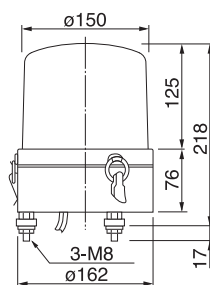
Large Basic Revolving Warning Light with highly durable housing.

- Installation: Indoors—upright, inverted, sideways; Outdoors—upright only.
- Main Body: SKL-CA - Scratch-free melamine baked finish; SKL-SA - Corrosion-proof stainless steel body (SUS304).
- Dome: Superior impact and heat resistant polycarbonate resin.
- Available Colors: Red, Amber, Green, Blue.
- Conforms to the CE requirements (for 12V DC, 24V DC, 48V DC type)

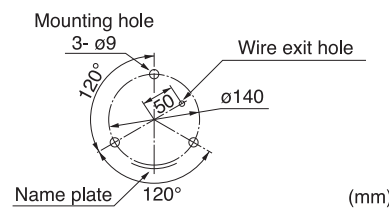
Large Revolving Warning Light with solid design.

- Main Body: Impact and heat resistant ABS resin.
- Dome: Superior weather-resistant and light translucent acrylic resin.
- Voltage Range: 12V/24V DC.
- Available Colors: Red, Amber, Blue.
- Bulb: Halogen type (Sold separately).

Dimensions



Mounting Dimension

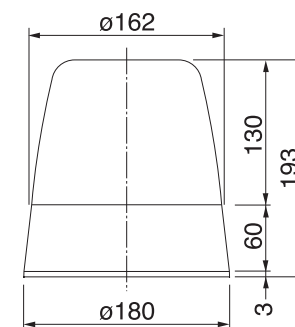


SKL-A Type

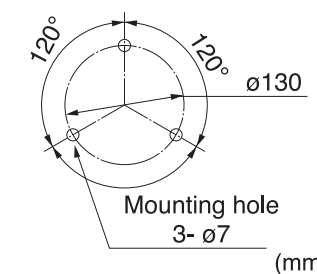
Model	Rated Voltage	Current	Rotations per Minute	Bulb	No.	Mass
SKL-101CA/101SA	12V DC	2.6A	140	12V35W	1	1.3kg
SKL-102CA/102SA	24V DC	1.2A		24V35W	2	
◎SKL-102ACSA	24V AC		0.8A	48V35W	5	1.4kg
SKL-104CA	48V DC	0.3A	120	120V40W	6	1.5kg
SKL-110CA/110SA	100V AC	0.4A		220V30W	37	
SKL-112SA	120V AC	0.13A				
SKL-120CA/120SA	200V AC					

Bulb: 12V/24V · RP35 BA15S · 48V/120V/220V · RP35 BA15D ◎: Special Order

Dimensions



Mounting Dimension



HP Type

Model	Rated Voltage	Halogen Bulb (Bulb is sold separately)	Rotations Per Minute	Mass
◎HP-12/24	12V/24V DC	12V55W or 24V70W	160	1.0kg

Bulb: 12V 55W H1, 24V 70W H1

◎: Special order

KG

Revolving Warning Light



Bulb



∅186

IP23

Dual-face Reflector

SKC-A

Revolving Warning Light



Bulb

∅187

IP23

Dual-face Reflector

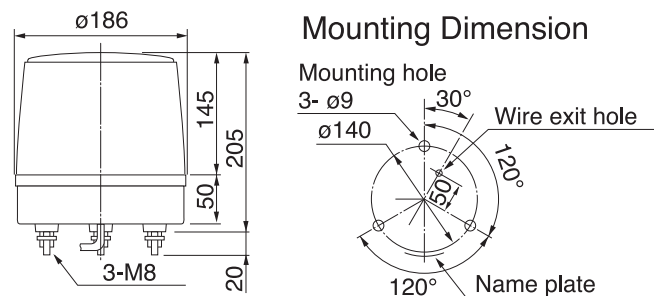
Light and large Revolving Warning Light with dual-face reflector.

- Dual-face reflector: For powerful rotary flash.
- Compact Motor: High durability and energy-efficient.
- Installation: Indoors: Upright, inverted, sideways. Outdoors: Upright only.
- Main Body: Black body for resistance to harsh weather and UV rays.
- Dome: Red: AS resin; Amber: PS resin.
- Available Colors: Red, Amber.

Large Revolving Warning Light featuring powerful flash using dual-face reflector.

- Dual-face reflector: For powerful rotary flash.
- Rotary Mechanism: Belt-drive, for extremely quiet and stable rotation.
- Compact Motor: High durability and energy-efficient.
- Extended Product Life: Vibration resistant and reliable operation even under severe cold environment (-30°C).
- Installation: Indoors—upright, inverted, sideways; Outdoors—upright only.
- Main Body: Melamine baked finish with corrosion-proof stainless steel (SUS 304) lens mounting fixture.
- Dome: Superior weather resistant and light translucent acrylic resin.
- Available Colors: Red, Amber, Green, Blue.
- Conforms to the CE requirements (for 12V, 24V type only).

Dimensions



(mm)

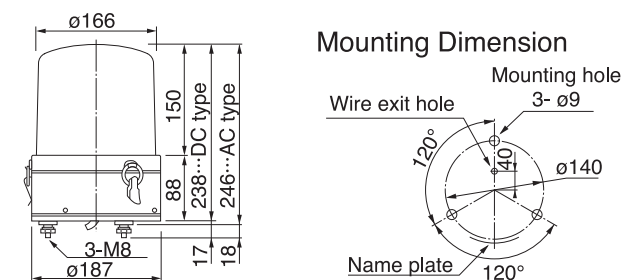
KG Type

Model	Rated Voltage	Current	Rotations per Minute	Bulb	Mass
KG-12	12V DC	2.7A	180	12V35W	0.7kg
KG-24	24V DC	1.2A		24V35W	
KG-100	100V AC	0.32A		120V40W	0.9kg

Bulb...RP35 BA15D

*Please contact your local PATLITE representative for another rated voltage.

Dimensions



(mm)

SKC-A Type

Model	Rated Voltage	Current	Rotations per Minute	Bulb	No.	Mass
SKC-201A	12V DC	2.6A	200	12V35W	1	1.6kg
SKC-202A	24V DC	1.2A		24V35W	2	
SKC-210A	100V AC	0.3A		120V40W	6	1.8kg
SKC-212A	120V AC	0.4A	160	220V30W	37	
SKC-220A	200V AC	0.13A				

Bulb...12V/24V · RP35 BA15S 120V/220V · RP35 BA15D

SKV-A

Revolving Warning Light



Bulb



∅204

IP66

HKFM

Revolving Warning Light



HKFM-101 type

HKFM-102 type



Bulb

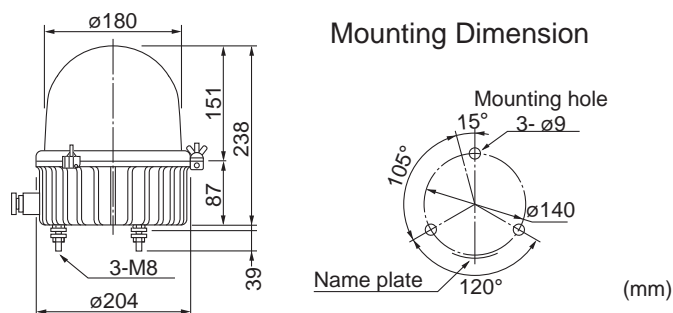
Corrosion-resistant Revolving Warning Light.

- Installation: Upright, inverted, sideways.
- Main Body: Corrosion-resistant aluminum alloy die-cast with metal cable gland.
- Dome: Superior impact and heat resistant polycarbonate resin.
- Operating Temperature Range: -30 ~80 .
- Available Colors: Red, Amber.

Compact explosion-proof revolving warning light with parabolic reflector.

- Integral Rotating Parabolic Reflector: For enhanced visibility from a distance.
- Installation: Indoors—upright, inverted, sideways; Outdoors—upright only.
- Main Body: Aluminum alloy die-cast with silver color baked finish.
- Dome: Acrylic resin covered with clear hard-glass, and metal guard.
- Product Standards: IEC Standards (IEC ExdIIB + H2T6) Zone1, 2 compliant.
- Approved by: TIIS.
- Available Colors: Red, Amber, Green, Blue.

Dimensions



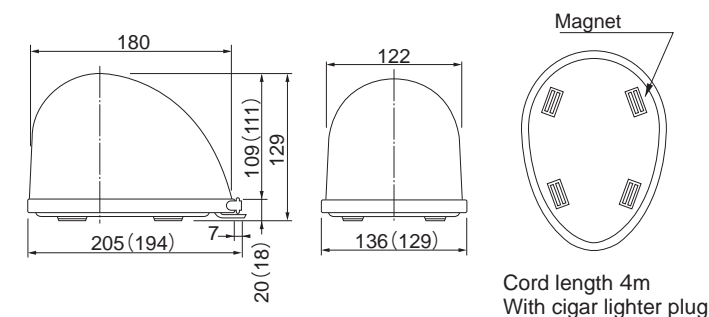
SKV-A Type

Model	Rated Voltage	Current	Rotations per Minute	Bulb	No.	Mass
SKV-101A	12V DC	2.6A	140	12V35W	1	2.6kg
SKV-102A	24V DC	1.2A		24V35W	2	
SKV-110A	100V AC	0.3A	120	120V40W	6	2.8kg
SKV-120A	200V AC	0.13A		220V30W	37	

Bulb: 12V/24V · RP35 BA15S 120V/220V · RP35 BA15D

⊙: Special order

Dimensions



HKFM Type

Model	Rated Voltage	Current	Rotations per Minute	Bulb	Mass
HKFM-101	12V DC	2.9A	230	12V35W	0.8kg
HKFM-102	24V DC	1.9A		24V55W	

Blub: BA15S

Secure this revolving light while driving to prevent it from falling. For lure to comply will result in danger to the vehicle behind. (Some local laws apply to use with moving vehicles.)

KUS

Cube Tower

LED



Bulb



80dB at 1m
(KUS-B type)

Electronic Sound 1
(KUS-B type)

70

IP54
(except the KUS-B)



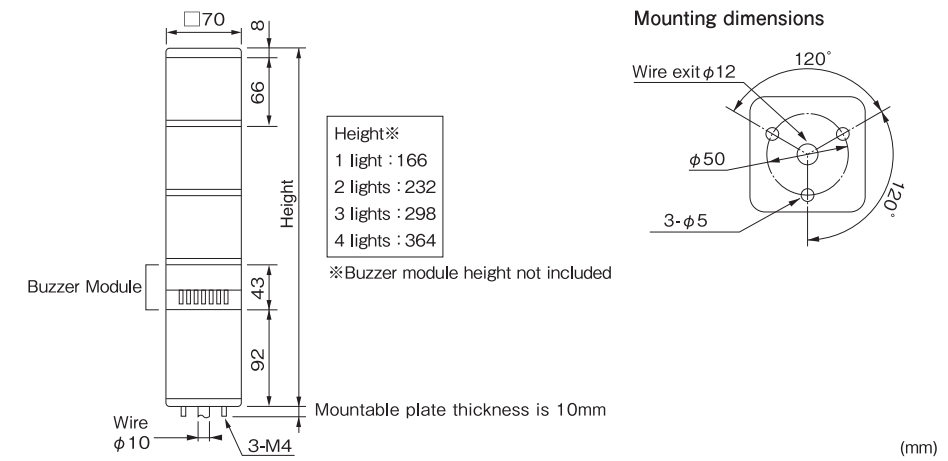
The KUS Series cube tower, with advanced technology, combines two different lights on one unit and has a modular design.

- IP Rating:IP-54(except the KUS-B).
- Lenses:Made of heat & shock resistant polycarbonate resin.
- Light modules can be stacked up to 4 tiers in any color combination.
- Each light module has a built-in dip switch to control the light on or off.
- Light units and base unit sold separately.
- Maximum operating capacity of base unit is 21 watts.
- KUS-F flashes 60 times a minute.

Available by Special Order

- Conforms to the CE requirements.

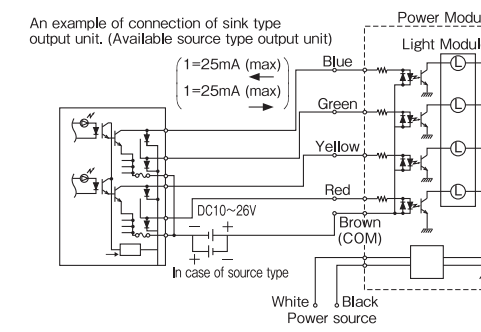
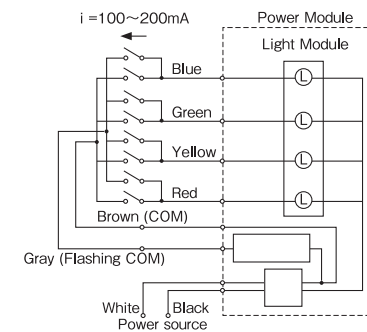
Dimensions



Wiring Diagram

Contact Input Type
(KUS,KUS-F)

Open-collector Type
(KUS-FC,C)



Transistor(NPN/PNP)

Model	NPN	PNP
Current Capacity	$I_c > 50\text{mA}$	
Withstanding Voltage	$V_c > 45\text{V}$	

Power source wire 0.75mm^2 : UL1007:400mm
Signal wire 0.3mm^2 : UL1007:350mm

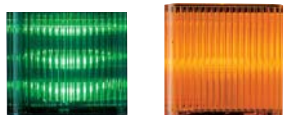
KUS Type

Power Module

Module Type	Model	Rated Voltage	Power Consumption
Continuous Lighting	KUS-24	AC/DC24V	Max.21W
	KUS-100	AC100V	
	KUS-120	AC120V	
	KUS-220	AC220V	
Continuous Lighting or Flashing	KUS-24F	AC/DC24V	
	KUS-100F	AC100V	
	KUS-120F	AC120V	
Continuous Lighting with Open-collector Wiring	KUS-24C	AC/DC24V	
	KUS-100C	AC100V	
	KUS-120C	AC120V	
	KUS-220C	AC220V	
Continuous Lighting or Flashing with Open-collector Wiring	KUS-24FC	AC/DC24V	
	KUS-100FC	AC100V	
	KUS-120FC	AC120V	
	KUS-220FC	AC220V	

Model	Rated Voltage	Power Consumption	Bulb	No.
KUS-S(Bulb)	DC24V	6W	24V 6W	19
KUS-EA(LED)	DC24V	R,Y: 1.2W/G,B,C: 0.9W		

Bulb...G14 BA9S



Model	Rated Voltage	Power Consumption	Volume
KUS-B	DC24V	0.5W	80dB(at 1m)*

※Buzzer pressure 0~70db (at 1m) (24V type)



KJS / KJSB

Cube Tower

Bulb



85dB at 1m

Electronic Sound 1
(KJSB type)

82

IP23

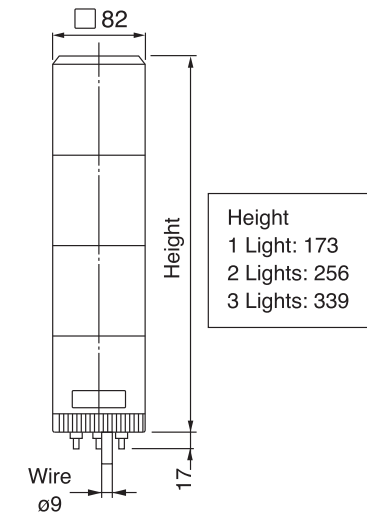
NPN
Open collector



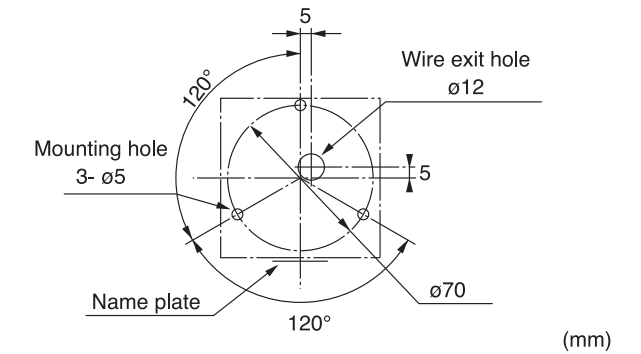
Compact Cube Tower featuring built-in buzzer designed for applications with small equipment.

- Integral Rotating Parabolic Reflector: For enhanced visibility from a distance.
- Flashing Cycle: 160 times/min.
- Built-in Alarm: Intermittent buzzer volume up to 85dB at 1m.
- Installation: Upright only.
- Main Body: Impact and heat resistant ABS resin.
- Lens: Superior weather resistant and light translucent AS resin.
- Spare Bulb: Included.
- Available Colors: Red, Amber, Green, Blue.

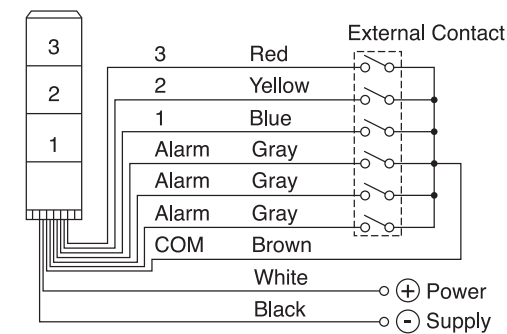
Dimensions



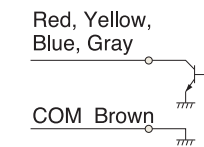
Mounting Dimension



Wiring Diagram



NPN open collector transistor



Transistor Capacity (NPN)

Model	KJS (KJSB)
Current Capacity	Ic ≥ 50mA (Ic ≥ 300mA)
Withstanding Voltage	Vc ≥ 45V

- ※ KJS does not have gray wires.
- ※ Mind the polarity in case of DC power supply.

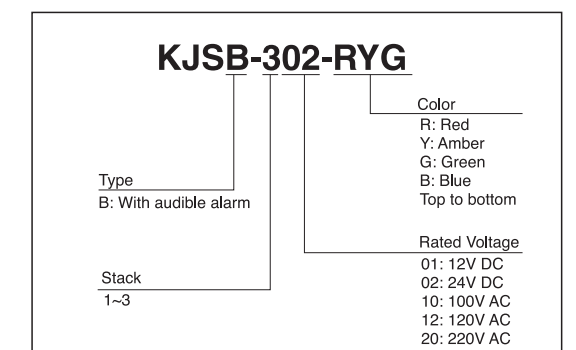
Current consumption and contact capacity per module

Rated Voltage	Lamp Wire Current	Alarm Wire Current	Lamp Wire Contact Capacity	Alarm Wire Contact Capacity
12V DC	34mA	100mA	50mA or more	300mA or more
24V DC				
100V AC				
120V AC				
220V AC				

KJS / KJSB Type

Number of Stacks	Model	Rated Voltage	Power Consumption	Bulb	No.
1 Light	KJS/KJSB-101	12V DC	6W	12V 5W	12
	KJS/KJSB-102	24V DC	12W	24V 10W	10
	KJS/KJSB-110	100V AC	8W	12V 5W	12
	KJS/KJSB-112	120V AC			
	KJS/KJSB-120	220V AC			
2 Lights	KJS/KJSB-201	12V DC	11W	12V 5W	12
	KJS/KJSB-202	24V DC	24W	24V 10W	10
	KJS/KJSB-210	100V AC	16W	12V 5W	12
	KJS/KJSB-212	120V AC			
	KJS/KJSB-220	220V AC			
3 Lights	KJS/KJSB-301	12V DC	16W	12V 5W	12
	KJS/KJSB-302	24V DC	35W	24V 10W	10
	KJS/KJSB-310	100V AC	23W	12V 5W	12
	KJS/KJSB-312	120V AC			
	KJS/KJSB-320	220V AC			

How to Order



KJ / KJB

Cube Tower

Bulb



85dB at 1m
(KJB type)

Electronic Sound 1

□116

IP23



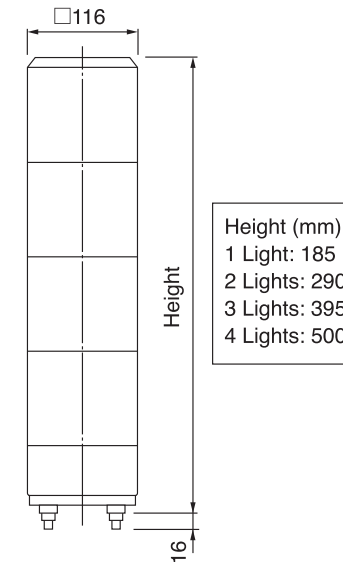
Light-weight Cube Tower featuring built-in buzzer suitable for various indoor applications.

- Integral Rotating Parabolic Reflector: For enhanced visibility from a distance.
- Flashing Cycle: 130 times/min.
- Built-in Alarm: Adjustable intermittent buzzer volume up to 85dB at 1m.
- Installation: Upright only.
- Main Body: Impact and heat resistant ABS resin.
- Lens: Superior weather resistant and light translucent AS resin.
- Spare Bulb: Included.
- Available Colors: Red, Amber, Green, Blue.

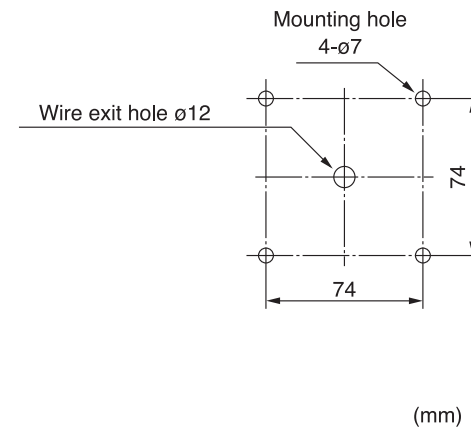
Available by Special Order

- CE Compliance.

Dimensions

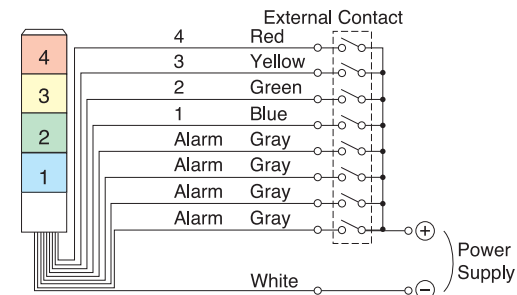


Mounting Dimension

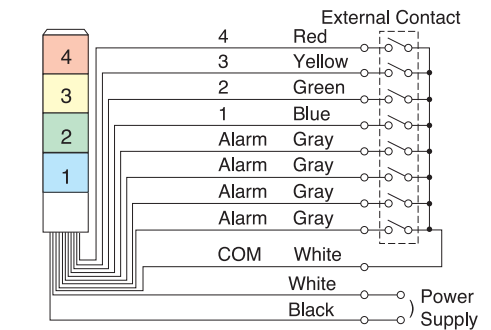


Wiring Diagram

KJ/KJB (24V DC)



KJ/KJB (100V AC, 220V AC)



※ KJ-110/112/120 are voltage contact type (there are no alarm signal wires).
 ※ KJ does not have gray wires.

Current consumption and contact capacity per module

Rated Voltage	Signal Wire Current	Inrush Current	External Contact Capacity	Alarm Wire Current	Alarm Wire Inrush Current
24V DC	0.42A	4.6A	5A or more	60mA	500mA
100V AC/120V AC/220V AC					

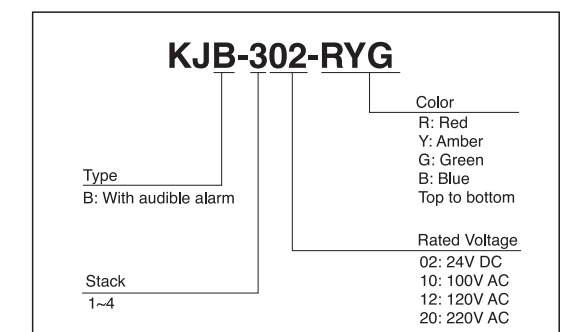
KJ Type

Number of Stacks	Model	Rated Voltage	Power Consumption	Bulb	No.
1 Light	KJ/KJB-102	24V DC	13.5W	24V 10W	10
	KJ/KJB-110	100V AC	6W	12V 5W	12
	KJ/KJB-112	120V AC	7W		
	KJ/KJB-120	220V AC	5.5W		
2 Lights	KJ/KJB-202	24V DC	25.5W	24V 10W	10
	KJ/KJB-210	100V AC	11W	12V 5W	12
	KJ/KJB-212	120V AC	13W		
3 Lights	KJ/KJB-220	220V AC	9.9W	24V 10W	10
	KJ/KJB-302	24V DC	37.5W		
	KJ/KJB-310	100V AC	16W		
	KJ/KJB-312	120V AC	18W		
4 Lights	KJ/KJB-320	220V AC	14.3W	24V 10W	10
	KJ/KJB-402	24V DC	49.5W		
	KJ/KJB-410	100V AC	21W		
	KJ/KJB-412	120V AC	26W		
	KJ/KJB-420	220V AC	18.7W	12V 5W	12

Bulb...G18 BA15S

KJB type approx. 130 flashes per minute.

How to Order



L.E.D. Light



CLF

LED Light Bar



CLF20-24-C



CLF20-24-R



CLF10-24-C



CLF20-24-Y



CLF10-24-Y



LED



IP67

- Conforms to the CE requirements.
- UL Recognized Component (File No. E320434)



Vertical mounting

CLT

LED Light Bar



IP67F

- Conforms to the CE requirements.
- UL Listed (File No. E306141)

PATLED's

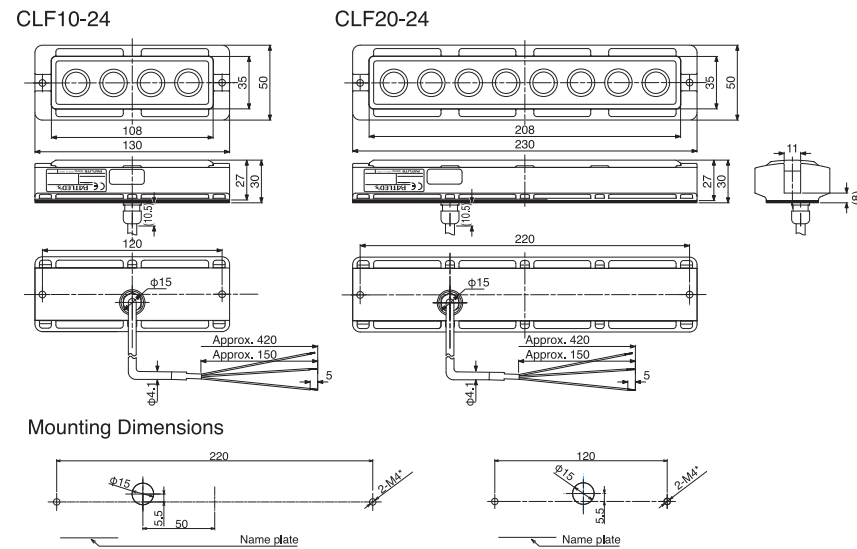
- High power 1,700lx illumination* for precise work operation.
- Water and dustproof IP67 construction.
- Steady Light Source.
- The light emitted from the unit does not contain infrared or UV rays, which radiate heat and damage materials.
- Stable operation from -30°C to +60°C.

* Luminous intensity at 50cm (CLF20-24-C)

Specifications of red color type and amber color type may be different from those of white color type

Clear/White	Red	Amber
Machine tool, control panel applications	Semiconductor manufacturing machinery, tester, etc.	Semiconductor manufacturing machinery, cleanroom environment, etc.

Dimensions



CLF Type

Model	CLF10-24			CLF20-24		
	C	R	Y	C	R	Y
LED Color	C	R	Y	C	R	Y
Rated Voltage	24V DC (No polarity)					
Operating Voltage Range	Rated voltage ±10%					
Power Consumption	2.5W			5W		
Light Source	High intensity LED×4			High intensity LED×8		
Luminous Intensity at Optical Center (lx at 50cm)	850	240	320	1,700	470	630
Main Body	Housing: Aluminum			Cover: Polycarbonate		
Operating Temperature Range	-30°C ~ +60°C (No condensation 90% RH or less)					
Installation	Indoor, Forward Direction					
Protection Rating	IP67					
Vibration Resistance	19.6m/s ²					
Mass	205g±10g			345g±10g		

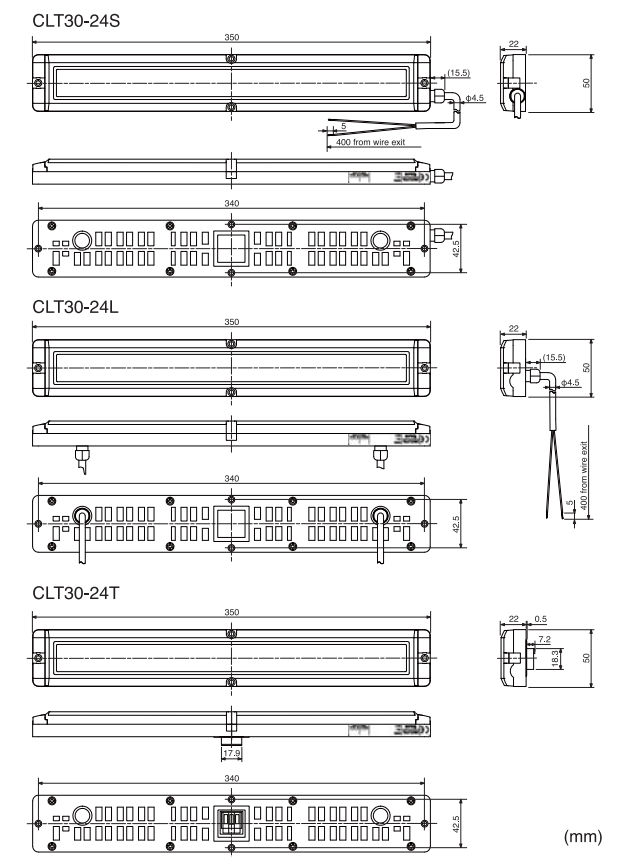
Dimensions

Oil resistant high power LED light bar with even and diffused light distribution.

- Oil, water and dustproof IP67F construction is ideal for harsh environments.
- Operation free from flicker and stroboscopic effects.
- 3 cable outlet versions are available for diversified mounting requirements.
- LED colors available in daylight color. Long service life and maintenance-free LED light bar is ideal for a machining center vision system, as well as food showcase food processing and packaging machine.

CLT Type

Model	CLT30-24S-CD	CLT30-24L-CD	CLT30-24T-CD
LED Color	Day light Color		
Rated Voltage	24V DC		
Operating Voltage Range	Rated Voltage ± 10%		
Current Consumption	416mA ± 40mA		
Light Source	High intensity LED × 16 elements		
Luminous Intensity at Optical Center (lx at 50cm)	500		
Main Body	Housing: Aluminum, Cover: Tempered glass		
Operating Temperature Range	-30°C ~ +60°C (No condensation 90%RH or less)		
Mounting Direction	Any Direction (for indoor use only)		
Protection Rating	IP66G/IP67G JIS C 0920: 2003/Aqueous oil resistant (Company Standards)		
Vibration Resistance	19.6m/s ²		
Mass	700g	750g	650g



(mm)

CLE

LED Work Light



LED



ø71

IP65f

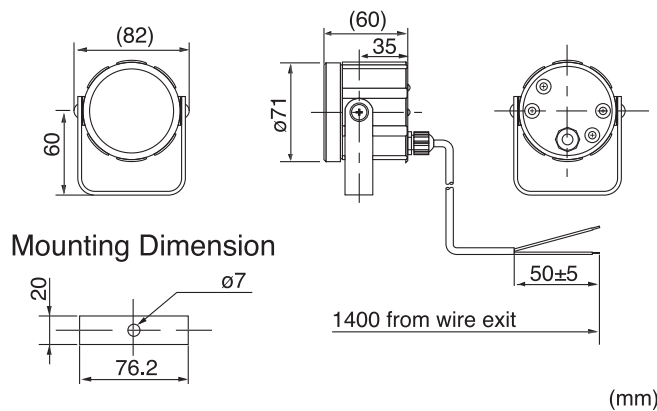
Wide Spot Type
CLE-24

Narrow Spot Type
CLE-24N

LED Work Light designed for applications for machine tool, inspection and processing industries.

- Enhanced Illumination: Uses ultra-bright LEDs.
- Extended product life, even in harsh environments.
- Energy-Efficient: Low power consumption and less heat build-up.
- Installation: Upright, inverted, sideways.
- Conforms to the CE requirements.

Dimensions



CLE Type

Model	Rated Voltage	Power Consumption	Luminosity	Mass
CLE-24	24V DC	3W	20cd	0.3kg
CLE-24N	24V DC	3W	130cd	0.3kg

CLM

LED Work Light



LED

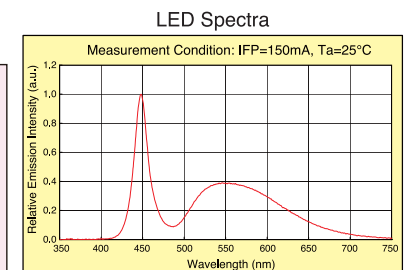
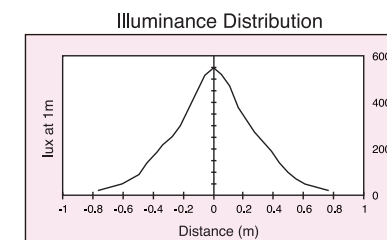


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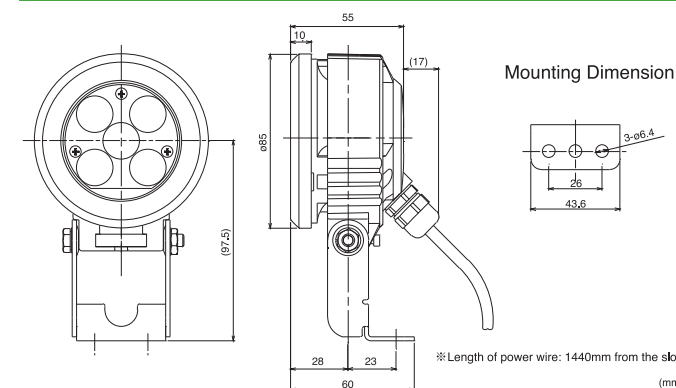
IP67f

Super bright LED work light with resistance to weather, dust, oil and water.

- Enhanced Illumination: 5 super-bright white LEDs.
- Installation: Direct mount with 1 screw, 1 or 2 point angle-mount.
- Mounting Parts: Corrosion resistant stainless steel bracket and mounting screws.
- Main Body: Impact resistant robust aluminum alloy body.
- Glass: Impact-resistant tempered glass.
- Conforms to the CE requirements.
- UL Listed (File No. E306141)



Dimensions



CLM Type

Model	Rated Voltage	Power Consumption	Intensity Level	Temperature Range
CLM-24	24V DC (no polarity)	3.0W	500cd (center)	-25°C to +60°C

LAS

Warning Light



LED



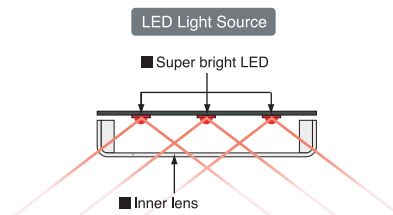
Water-
Vibration-
proof

12V
24V
Compatible

※Water-proof: JIS D 0203S1-1995
Vibration-proof: 70m/s JIS D 1601-1995

Super bright, compact energy-saving LED auxiliary warning light designed for emergency vehicles to ensure safety.

- Enhanced Illumination: Use of super bright LED with optimized special lens design for highest illumination and wide emission.
- Improved Visibility: Visible from the sides and front.
- Lighting Pattern: 10 built-in patterns and multiple units can be flashed synchronously.
- Installation: Direct mount with L-angle bracket.
- Available Colors: Red, Amber, Blue.



LAS Type

Model	Rated Voltage	Operating Voltage Range	Flashing Pattern	Current Consumption				Operating Temperature Range	Mass
				Red / Amber		Blue			
LAS-M1KV	12V / 24V DC	9.5 ~ 30.0V DC	10 Patterns	560 ± 190mA (at 12V DC)	390 ± 110mA (at 24V DC)	830 ± 350mA (at 12V DC)	370 ± 150mA (at 24V DC)	-30°C ~ +80°C*	0.3kg

*Operating temperature range is -30°C~+40°C when all lit-up

Alarm Products



BM

Signal Horn



BM-D

90dB at 1m (BM-H type)
(BM type: 85dB at 1m, BM-D type: 80dB at 1m)

2 channels

∅30

IP34
(BM-D Type: Front only)

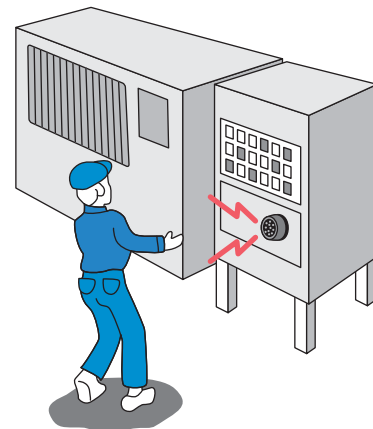
NPN/PNP
Open collector

Compact Signal Horn designed for integrated applications with control panels, switchboards and production equipment.

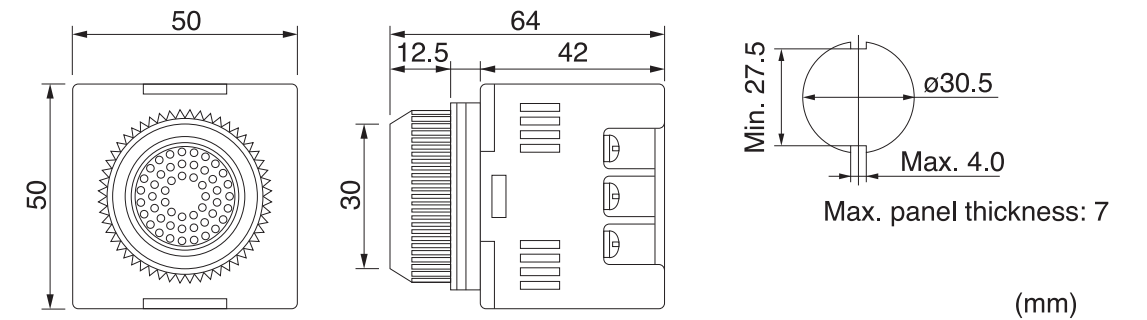
- Built-in Alarm: Audible sound up to 90dB at 1m^{*1}.
- Sound Pattern: Selectable 2 patterns of alarm sound.
- Body: Compact and lightweight (100g).
- NPN/PNP Compatible: 24V type only.
- CE Compliant: For 24V AC/DC only.

*1 BM-H type only

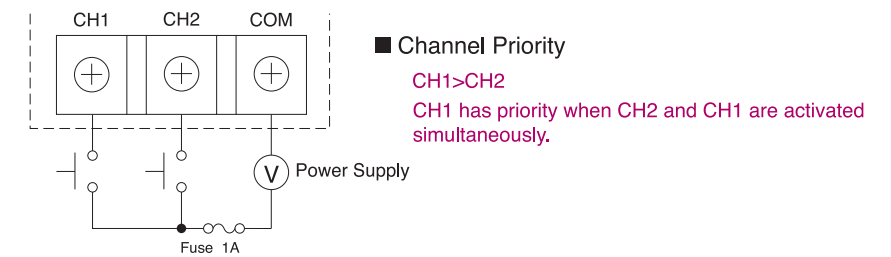
Application Examples



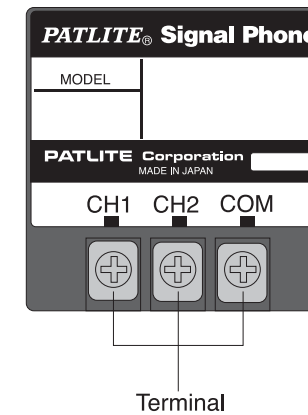
Dimensions



Wiring Diagram



Rear View



BM Type

Model	Rated Voltage	Voltage Range	Power Consumption	Volume	External Contact Capacity	Operating Temperature Range	Auxiliary Input	Channel	Protection	Mass
Standard Type	BM-202	24V AC/DC	AC/DC 22V~26V	0.4W	Max. 80dB at 1m	More than 100mA	-10°C~+60°C Humidity 85% or less.	Voltage contact	2	0.1kg
	BM-210	100V AC	90V~110V AC	2.5W	Max. 85dB at 1m					
	BM-220	220V AC	200V~240V AC	3.5W	Max. 85dB at 1m					
High Volume Type	BM-210H	100V AC	90V~110V AC	2.5W	Max. 90dB at 1m					
	BM-212H	120V AC	108V~132V AC	2.5W	Max. 90dB at 1m					
	BM-220H	220V AC	200V~240V AC	3.5W	Max. 90dB at 1m					
Drip-proof Type	BM-202D	24V AC/DC	22V~26V AC/DC	0.4W	Max. 75dB at 1m					
	BM-210D	100V AC	90V~110V AC	2.5W	Max. 80dB at 1m					
	BM-220D	220V AC	200V~240V AC	3.5W	Max. 80dB at 1m					

BD

Audible Alarm



90dB at 1m

32 Sounds

80

IP54

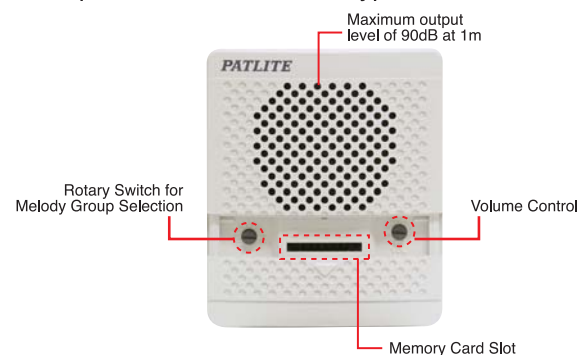
NPN
Open Collector

The BD series has a melody, chime and alarm capability, variable audible control, and a compact but loud speaker.

- Maximum output level of 90dB at 1m is suitable for use in a noisy factory.
- 32 sounds are pre-recorded in one unit which can be used for various applications.
- Sound output level and sound group can be selected by rotary switches stored behind the front panel for easier operation, even after installation.
- Select a sound group to playback 4 pre-recorded sounds.
- A new sound group can be created from the 32 sounds by using an optional memory card (Sold separately).
- RoHS compliant.
- Conforms to the CE requirements (for 12V/24V type).
- UL Recognized Component (File No. E24210)

Available by Special Order

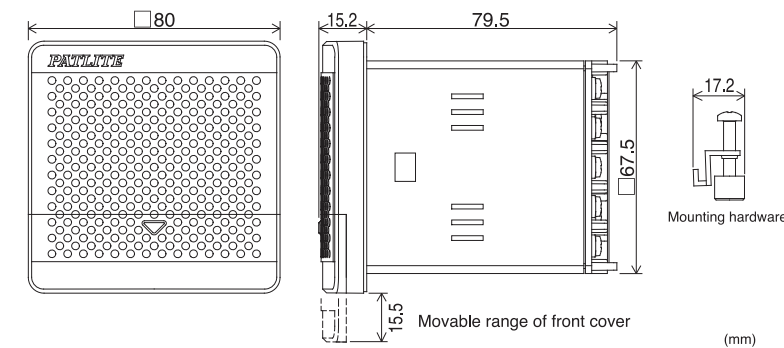
- Binary input controlled 15 sound playback type.
- PNP open collector transistor type.



BD Type

Model	BD-24□	BD-100□
Rated Voltage	12V/24V DC	100V / 220V AC 50/60Hz
Operating Voltage Range	10.8 ~ 26.4V DC	100V±10% AC / 220V±10% AC
Power Consumption	Max. 4W	Max. 6W
Volume	Max. 90dB at 1m (when flush mount), volume level adjustable Volume may be less, depending on sound type and operating conditions	
Input System	1bit input	
Input Signal Time	Continuous	
Boot up Time	For input voltage: 1s or less For channel signal: 170ms or less	
Channel	4 channels	
Recorded Sound	32 alarms and melodies	
Sound Group	16 patterns (A to P)	
Operating Temperature Range	-20°C ~ 50°C	
Relative Humidity	85% RH or less (No condensation)	
Protection Rating	IP54 (when flush mount, front direction only)	
Vibration Resistance	19.6m/s ²	
Mass	205g±10%	325g±10%

Dimensions



Note: See page 177 for wiring diagram

Sound Selection Charts

BD-A type

GROUP	CH1	CH2	CH3	CH4
A _{#1}	Beep (slow intermittent horn)	Stutter (rapid intermittent horn)	Bell (clear high pitched bell)	Yelp (rapid siren)
B	Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
C	Stutter (rapid intermittent horn) Bell (clear high pitched bell)	Synthesized Melody Chime	Chime	Call sign
D	Fur Elise	Maiden's Prayer	Chime	Call sign
E	Minuet	Annie Laurie	Chime	Call sign
F	London Bridge is Falling Down	Holdiridia	Chime	Call sign
G	Mary Had a Little Lamb	Camptown Races	Chime	Call sign
H	Kuck kuck	Der Schmied im Walde	Chime	Call sign
I	On the Bridge of Avignon	Daydream Believer	Chime	Call sign
J	Amaryllis	Mozart Symphony No. 40	Chime	Call sign
K	Itsy Bitsy Spider	Ich bin ein Musikante	Chime	Call sign
L	Jeux Interdits	Katuscha	Chime	Call sign
M	Grandfather's Clock	Ave Maria	Chime	Call sign
N	Holdiridia	Ich bin ein Musikante	Stutter (rapid intermittent horn) Bell (clear high pitched bell)	Synthesized Melody Chime
O	Mary Had a Little Lamb	Jeux Interdits	Stutter (rapid intermittent horn) Bell (clear high pitched bell)	Synthesized Melody Chime
P _{#2}	Camptown Races	Kuck kuck	Katuscha	Grandfather's Clock

BD-D type

GROUP	CH1	CH2	CH3	CH4
A _{#1}	Beep (slow intermittent horn)	Stutter (rapid intermittent horn)	Bell (clear high pitched bell)	Yelp (rapid siren)
B	Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
C	Runner	Marmotte Agetai	Chime	Call sign
D	Oribiao Kikinagara	A September	Chime	Call sign
E	Doyoubino Koibito	Akino Kehai	Chime	Call sign
F	Saafu Tengoku Sukii Tengoku	Iro Howaitoburendo	Chime	Call sign
G	Hi Ho	Bear Song	Chime	Call sign
H	Konnako Irukana	Rudolph the Red-nosed Reindeer	Chime	Call sign
I	Oh My Darling Clementine	Yankee Doodle	Chime	Call sign
J	Runner	Marmotte Agetai	Oribiao Kikinagara	A September
K	Doyoubino Koibito	Hi Ho	Saafu Tengoku Sukii Tengoku	Iro Howaitoburendo
L	Happy Birthday	OKonnako Irukana	I've been working on the Railroad	Bear Song
M	Toys Go Cha Cha Cha	Konnako Irukana	Wiegenlied	Rudolph the Red-nosed Reindeer
N	She Wore a Yellow Ribbon	Oh My Darling Clementine	Yellow Rose of Texas	Yankee Doodle
O	When the Saints Go Marching In	Londonderry Air	Runner	Marmotte Agetai
P _{#2}	Hi Ho	I've been working on the Railroad	Yankee Doodle	When the Saints Go Marching In

BD-C type

GROUP	CH1	CH2	CH3	CH4
A _{#1}	Beep (slow intermittent horn)	Stutter (rapid intermittent horn)	Bell (clear high pitched bell)	Yelp (rapid siren)
B	Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
C	Stutter (rapid intermittent horn) Bell (clear high pitched bell)	Synthesized Melody Chime	Chime	Call sign
D	Can't Take My Eyes off of You	Top of the World	Chime	Call sign
E	The Entertainer	Amazing Grace	Chime	Call sign
F	Amairono Kamino Otome	Les Champs-Elysees	Chime	Call sign
G	Canon	Rara Sanshain	Chime	Call sign
H	Uchuusenkan Yamato	Oshiete	Chime	Call sign
I	Makenaide	Gonna Fly Now (Theme for "Rocky")	Chime	Call sign
J	I Don't Want to Miss a Thing	Yozorano Mukou	Chime	Call sign
K	Aiwa Katsu	Truth	Chime	Call sign
L	Gattsudaze	Odoru Ponpokorin	Chime	Call sign
M	Imasugu Kisu Mi	Haruyo Koi	Chime	Call sign
N	Les Champs-Elysees	Truth	Stutter (rapid intermittent horn) Bell (clear high pitched bell)	Synthesized Melody Chime
O	Canon	Gattsudaze	Stutter (rapid intermittent horn) Bell (clear high pitched bell)	Synthesized Melody Chime
P _{#2}	Rara Sanshain	Uchuusenkan Yamato	Odoru Ponpokorin	Imasugu Kisu Mi

BD-E type

GROUP	CH1	CH2	CH3	CH4
A _{#1}	Beep (slow intermittent horn)	Stutter (rapid intermittent horn)	Bell (clear high pitched bell)	Yelp (rapid siren)
B	Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
C	Stutter (rapid intermittent horn) Bell (clear high pitched bell)	Synthesized Melody Chime	Chime	Call sign
D	Oribiao Kikinagara	A September	Chime	Call sign
E	Doyoubino Koibito	Akino Kehai	Chime	Call sign
F	Saafu Tengoku Sukii Tengoku	Iro Howaitoburendo	Chime	Call sign
G	Hi Ho	Bear Song	Chime	Call sign
H	Konnako Irukana	Rudolph the Red-nosed Reindeer	Chime	Call sign
I	Fur Elise	Minuet	Chime	Call sign
J	Annie Laurie	Ave Maria	Chime	Call sign
K	Mary Had a Little Lamb	Camptown Races	Chime	Call sign
L	Amaryllis	Mozart Symphony No. 40	Chime	Call sign
M	Ave Maria	Grandfather's Clock	Chime	Call sign
N	Fur Elise	London Bridge is Falling Down	Chime	Call sign
O	Annie Laurie	Minuet	Chime	Call sign
P _{#2}	Hi Ho	I've been working on the Railroad	Mozart Symphony No. 40	Ave Maria

*1 Factory default setting *2 Can be programmed with optional SD Card (SDV-128P/sold separately)

PATLITE Corporation has not applied for permission to use certain copyrighted music or songs recorded in BD-A, C and D types outside of Japan. Therefore, please contact the local copyright association for permission before using the product in case this product is used outside of Japan. BD-E type is recommended for use outside of Japan as this model does not include copyrighted music or songs, and permission is not required.

BK

Audible Alarm



95dB at 1m

(Actual sound level may vary depending on sound type.)

32 Sounds

IP54

NPN
Open Collector

The BK series has melody, chime and alarm capability, variable audible control, and a compact but loud speaker.

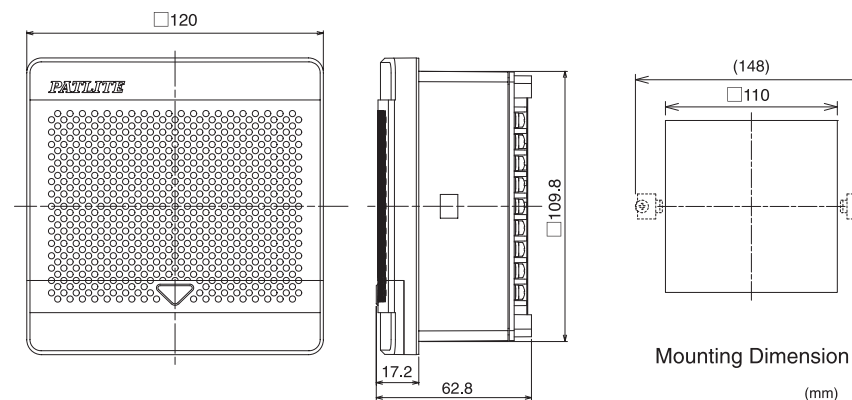
- 32 sounds are pre-recorded in one unit which can be used for various applications.
- Maximum output level of 95dB at 1m is suitable for use in a noisy factory.
- Volume output and sound groups can be changed easily by rotary switches stored inside of the front panel, even after installation.
- Select a sound group to playback 8 pre-recorded sounds (When controlled by bit input).
- A new sound group can be created from the 32 sounds with an optional SD card (Sold separately).
- RoHS compliant.
- Set the sound selection switch to test the function or volume level.
- Sound can be played back by a bit (8 channels) or binary (32 channels) input.
- Conforms to the CE requirements (for 12V/24V type).

Available by Special Order

- PNP open collector transistor type.



Dimensions



Note: See page 177 for wiring diagram

How to Order

BK-24A-J	
Model	Color
	J: Light Gray K: Dark Gray
Rated Voltage	Sound Type
24: 12-24V DC 100: 100V AC 220: 220V AC	A: Type A C: Type C D: Type D E: Type E

BK Type

Model	Rated Voltage	Voltage Range	Power Consumption	Volume	Operating Temperature Range	Channels	Protection Rating	Mass
BK-24	12-24V DC	10.8V~26.4V DC	12W	Max. 95dB at 1m*	-20°C~+50°C (Humidity 85% or less)		IP54 (when flush mount, front direction only)	350g±10%
BK-100	100V AC	100V AC±10%	10W					530g±10%
BK-220	220V AC	220V AC±10%	11W					530g±10%

*Actual sound level will depend on sound type and operating conditions.

Sound Selection Chart

32 sounds are pre-recorded in one unit. 4 sound types are available.



T-06B0152
T-0710139
T-0710140

BK-A

Beep (slow intermittent horn)	Stutter (rapid intermittent horn)	Bell (clear high pitched bell)	Yelp (rapid siren)
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Stutter (rapid intermittent horn) Bell (clear high pitched bell)	Synthesized Melody Chime	Chime	Call sign
Fur Elise	Maiden's Prayer	Minuet	Annie Laurie
London Bridge is Falling Down	Holdiridia	Mary Had a Little Lamb	Campdown Races
Kuck kuck	Der Schmied im Walde	On the Bridge of Avignon	Daydream Believer
Amaryllis	Mozart Symphony No. 40	Itsy Bitsy Spider	Ich bin ein Musikante
Jeux Interdits	Katuscha	Grandfather's Clock	Ave Maria

BK-C

Beep (slow intermittent horn)	Stutter (rapid intermittent horn)	Bell (clear high pitched bell)	Yelp (rapid siren)
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Stutter (rapid intermittent horn) Bell (clear high pitched bell)	Synthesized Melody Chime	Chime	Call sign
Can't Take My Eyes off of You	Top of the World	The Entertainer	Amazing Grace
Amairono Kamino Otome	Les Champs-Elysees	Canon	Rara Sanshain
Uchuusenkan Yamato	Oshiete	Makenaide	Gonna Fly Now (Theme for "Rocky")
I Don't Want to Miss a Thing	Yozorano Mukou	Aiwa Katsu	Haruyo Koi
Gattsudaze	Odoru Ponpokorin	Imasugu Kisu Mi	Truth

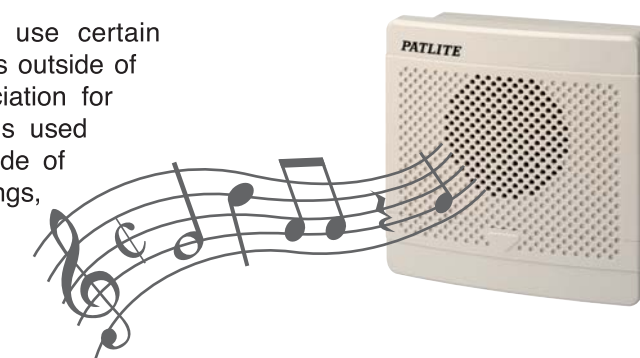
BK-D

Beep (slow intermittent horn)	Stutter (rapid intermittent horn)	Bell (clear high pitched bell)	Yelp (rapid siren)
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Runner	Mamotte Agetai	Chime	Call sign
Oribiao Kikinagara	A September	Doyoubino Koibito	Akino Kehai
Saafu Tengoku Sukii Tengoku	Iro Howaitoburendo	Happy Birthday	Hi Ho
I've been working on the Railroad	Bear Song	Toys Go Cha Cha Cha	Konnako Irukana
Wiegenlied	Rudolph the Red-nosed Reindeer	She Wore a Yellow Ribbon	Oh My Darling Clementine
Yellow Rose of Texas	Yankee Doodle	When the Saints Go Marching In	Londonderry Air

BK-E

Beep (slow intermittent horn)	Stutter (rapid intermittent horn)	Inverted Receille	Annie Laurie
Stutter (rapid intermittent horn)	Synthesized Melody Chime	Galactic Motor	London Bridge is Falling Down
Bell (clear high pitched bell)	Chime	Ringling Phone	Mary Had a Little Lamb
Yelp (rapid siren)	Call Sign	Two Tone	Campdown Races
Rapid Hi-Lo	Train Ride	Alarm Clock	Amaryllis
Melody Chime	Galloping Hi-Lo	Ringling Hi-Lo	Mozart Symphony No.40
Synthesized Piano	Alien Chatter	Fur Elise	Ave Maria
Synthesized Bell	Falling Crystals	Minuet in G	Grandfather's Clock

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EWH / EWHS

Signal Horn



105dB at 1m

32 sounds

IP65

(IP65 available by special order)

NPN
Open collector

Original wide horn featuring clear and high volume up to 105dB at 1m, designed for use in noisy environments.

- 32 sounds are pre-recorded in one unit.
- For enhanced durability and safety in the work environment.
- Built-in Alarm: Adjustable audible sound up to 105dB at 1m with volume control.
- Installation: Indoors—upright, inverted, sideways; Outdoors—upright only. (Do not install the horn facing upward).
- Easy Installation: With anti-corrosive stainless steel mounting bracket.
- NPN Compatible: 24V type only (EWH series only).
- Conforms to the CE requirements (for 12V, 24V type).

Available by Special Order

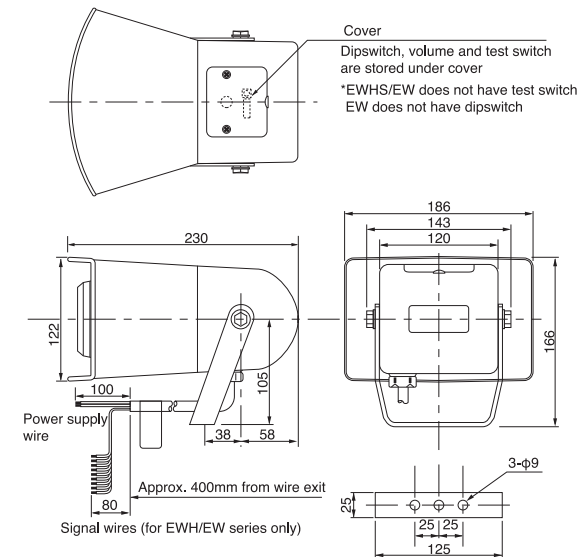
- PNP open collector type.

EWH / EWHS Type

	Model	Rated Voltage	Voltage Range	Power Consumption	Volume	Outer Contact Capacity	Operating Temperature Range	Auxiliary Input	Channel	Protection	Mass
EWH	EWH-24	12/24V AC/DC	8V~28V AC/9V~35V DC	8W	Max. 105dB at 1m	EW: More than 10mA	-20°C~+60°C	EWH: Voltage free contact 8/1bit 32/binary	8/1bit or 32/binary	IP53	1.2kg
	EWH-48	48V DC	35V~60V DC	10W							
	EWH-100	100V AC	90V~132V AC	12W							
	EWH-200	200V AC	180V~260V AC	13W							
EWHS	EWHS-24	12/24V AC/DC	8V~28V AC/9V~35V DC	8W	Max. 105dB at 1m	EW/EWHS: More than 5A	Humidity 85% or less.	EWHS: Voltage contact	1	IP65*	1.2kg
	EWHS-48	48V DC	35V~60V DC	10W							
	EWHS-100	100V AC	90V~132V AC	12W							
	EWHS-200	200V AC	180V~260V AC	13W							

* By special order

Dimensions



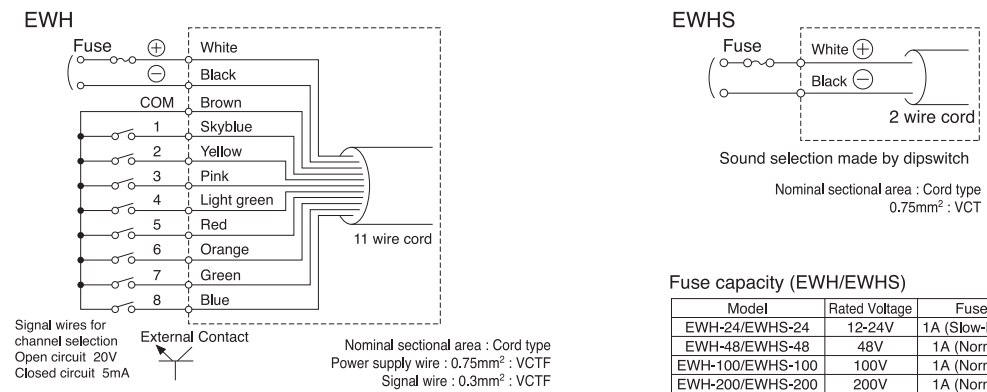
How to Order

EWH-24A-J

Model	Body Color
EWH: 8 channels/bit input 32 channels/binary input EWHS: 1 channel	J: Ivory Y: Yellow R: Red
Rated Voltage	Sound type
24: 12/24V AC/DC 48: 48V DC 100: 100V AC 200: 200V AC	A: Type A C: Type C D: Type D E: Type E

Test switch (for EWH series only)
Test switch is stored under cover. Switch can be used to check the operation or adjust sound volume.

Wiring Diagram



Channel priority (for EWH series)
8 (Blue) > 7 (Green) > 6 (Orange) > 5 (Red) > 4 (Lightgreen) > 3 (Pink) > 2 (Yellow) > 1 (Skyblue)
The greater number has priority when any of the channels are activated simultaneously.
Polarity symbol of power source is for EWH and EWHS series, in 12/24V DC and 48V DC types.

Fuse capacity (EWH/EWHS)

Model	Rated Voltage	Fuse
EWH-24/EWHS-24	12-24V	1A (Slow-blow)
EWH-48/EWHS-48	48V	1A (Normal)
EWH-100/EWHS-100	100V	1A (Normal)
EWH-200/EWHS-200	200V	1A (Normal)

Sound Selection Charts

32 sounds are pre-recorded in one unit. 4 sound types are available.

EWH/EWHS-A

Beep (slow intermittent horn)	Stutter (rapid intermittent horn)	Bell (clear high pitched bell)	Yelp (rapid siren)
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Stutter (rapid intermittent horn)	Synthesized Melody Chime	Chime	Call sign
Bell (clear high pitched bell)	Fur Elise	Maiden's Prayer	Minuet
London Bridge is Falling Down	Holdiridia	Mary Had a Little Lamb	Camptown Races
Kuck kuck	Der Schmied im Walde	On the Bridge of Avignon	Daydream Believer
Amaryllis	Mozart Symphony No. 40	Itsy Bitsy Spider	Ich bin ein Musikante
Jeux Interdits	Katuscha	Grandfather's Clock	Ave Maria

EWH/EWHS-D

Beep (slow intermittent horn)	Stutter (rapid intermittent horn)	Bell (clear high pitched bell)	Yelp (rapid siren)
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Runner	Mamotte Agetai	Chime	Call sign
Oribiao Kikinagara	A September	Doyoubino Koibito	Akino Kehai
Saafu Tengoku Sukii Tengoku	Iro Howaitoburendo	Happy Birthday	Hi Ho
I've been working on the Railroad	Bear Song	Toys Go Cha Cha Cha	Konnako Irukana
Wiegenlied	Rudolph the Red-nosed Reindeer	She Wore a Yellow Ribbon	Oh My Darling Clementine
Yellow Rose of Texas	Yankee Doodle	When the Saints Go Marching In	Londonderry Air

EWH/EWHS-C

Beep (slow intermittent horn)	Stutter (rapid intermittent horn)	Bell (clear high pitched bell)	Yelp (rapid siren)
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Stutter (rapid intermittent horn)	Synthesized Melody Chime	Chime	Call sign
Can't Take My Eyes off of You	Top of the World	The Entertainer	Amazing Grace
Amairono Kamino Otome	Les Champs-Elysees	Canon	Rara Sanshain
Uchusenkan Yamato	Oshiete	Makenaide	Gonna Fly Now (Theme for 'Rocky')
I Don't Want to Miss a Thing	Yozorano Mukou	Aiwa Katsu	Haruyo Koi
Gattsudaze	Odoru Ponpokorin	Imasugu Kisu Mi	Truth

EWH/EWHS-E

Beep (slow intermittent horn)	Stutter (rapid intermittent horn)	Inverted Receille	Annie Laurie
Stutter (rapid intermittent horn)	Synthesized Melody Chime	Galactic Motor	London Bridge is Falling Down
Bell (clear high pitched bell)	Chime	Ringling Phone	Mary Had a Little Lamb
Yelp (rapid siren)	Call Sign	Two Tone	Camptown Races
Rapid Hi-Lo	Train Ride	Alarm Clock	Amaryllis
Melody Chime	Galloping Hi-Lo	Ringling Hi-Lo	Mozart Symphony No.40
Synthesized Piano	Alien Chatter	Fur Elise	Ave Maria
Synthesized Bell	Falling Crystals	Minuet in G	Grandfather's Clock

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JASDAC
T-06B0152
T-0710139
T-0710140

Voice & Sound



Easy steps to use MP3 products



STEP 1

Get the Playlist Editor

The playlist Editor is free software from Patlite. Please contact us by e-mail at www.patlite.com.

STEP 2

Get the model SDV-128P

The model SDV-128P is an SD card from PATLITE. The PATLITE corporation is a member of the SD card Association.

STEP 3

Create the MP3 messages

Convert the voice message data into MP3 data.
*Remove the "ID3" tags for the model WG only.

STEP 4

Save the MP3 data onto the SD card

STEP 5

Load the MP3 data into the product

Preparing the SD Card

Playlist Editor (FV-Win)

With Windows XP/Windows Vista*, and PATLITE software, You can download from the Web.

Creating Play List Using Playlist Editor

Playlist Editor Overview

Step 1

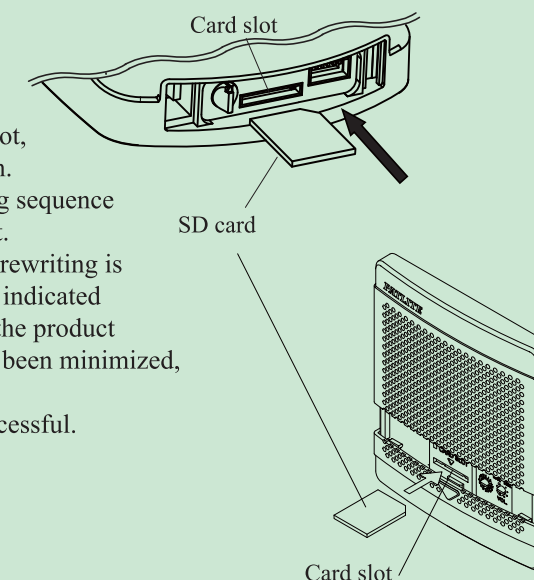
1. Divided into Channel & Phrases
2. Start software

Step 2

1. Insert Sound files in appropriate channel & phrase
2. After all files are installed, save file as "playlist.slp"
3. This completes the play list creation.

Example (BKV, LKEH)

- (1) Open the front cover. (Refer to the product manual for more details)
- (2) After inserting the SD Card with the stored data into the slot, a high-low beep will sound to indicate rewriting has begun.
- (3) When a short beep sound is heard, it indicates the rewriting sequence is complete and the SD Card can be removed from the slot.
* Rewriting should be completed within 60 seconds. The rewriting is not successfully completed if beeping sounds other than indicated above are heard, or when there is no response (Refer to the product manual for more details). In addition, if the volume has been minimized, the beeping sounds cannot be heard.
- (4) Playback the channels to verify the rewriting has been successful. (Refer to the product manual for more details)



Please

- It is recommended to use Model SDV-128 (sold separately). Using other SD Cards is not guaranteed for proper operation.
- Use "FAT16" when formatting the SD Card.
- When inserting the SD Card into the slot, be sure to insert it in the proper direction and do not forcibly insert the card. Failure to comply will result in damage to the SD Card and/or product.
- Avoid the intrusion of any foreign substances from entering the card slot.
- While rewriting the messages, do not disconnect power or remove the SD Card.

Note

- If the SD Card was inserted during message playback, the rewriting procedure will commence soon after the message completes its playback.
- During the message rewrite, any signal inputs on the Audio Input line will be ignored.

BDV

Voice Annunciator



87 dB at 1m

63 Second

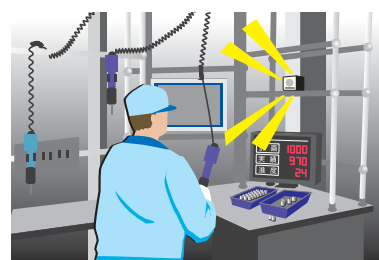
IP54 Upright direction only.

NPN Open Collector

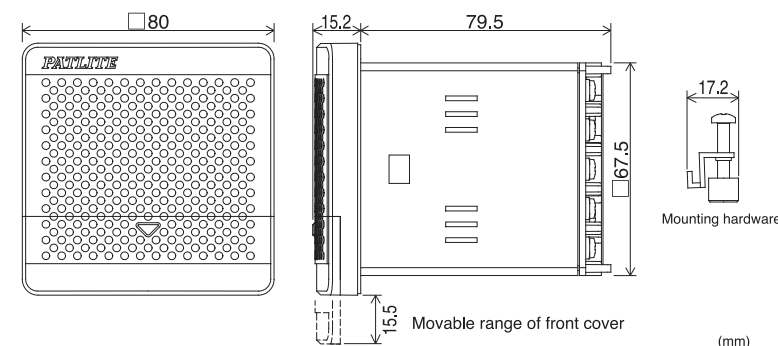
Excellent sound quality with MP3 playback! This panel-mounted MP3 voice annunciator uses SD cards,* allowing messages to be changed easily.

* SD card not included.

- Only Flush-mounting style available.
- Able to produce a loud sound of up to 87 dB (at 1m) despite its compact size
- A volume control on the front panel provides an easy way to adjust the sound volume.
- The use of an SD card allows message changes without dis-mounting the device.
- Environmentally friendly since the unit complies with the EU RoHS Directives.
- Several playback modes are available for various applications.
- Includes binary input as a standard option for selecting up to 15 messages.
- Supports input selection using NPN open-collector transistor.
- The unit complies with EU Directives and includes the CE mark (BDV-15JF only)
- Two colors are available for selecting the best color match for the installation.
- Protection rating: IP54 (only the front panel when flush-mounted)



Dimensions



Note: See page 177 for wiring diagram

How to Order

BDV-15JF-J

Rated Voltage
J: 12-24V DC
K: 100V/220V AC

Color
J: Ivory White
K: Dark Gray

BDV Type

Model	Rated Voltage	Voltage Range	Power Consumption	Volume	Voice File	Relative Humidity	Maximum Playing Time	Number of playing messages	Protection Rating	Mass
BDV-15JF	12-24V DC	10.8V~26.4V DC	4W	Max 87dB (at 1m)	MPEG1-Audio Layer (mp3) Standard bit rate : 64kbit/s, Fs=44.1kHz	-10 ~ +50 (Less than 85%RH)	63sec.	4 (Bit input) 15 (Binary input)	IP54 When flush mounted	0.22kg
BDV-15KF	100/220V AC	100V AC±10% 220V AC±10%	5W							0.34kg

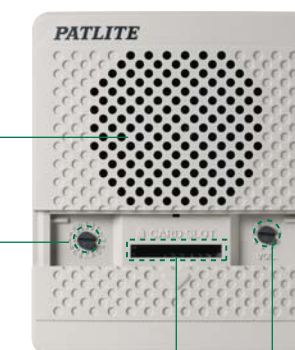
* Actual sound level will depend on sound type and operating conditions.

Sound Selection Charts

Mode Selector Switch

Several playback modes are available for various applications.

A Bit input mode	Plays back up to 4 messages using Channels 1 to 4
B Binary input mode	Plays back up to 15 messages using Channels 1 to 4
C Bit input/volume reduction mode	Plays back up to 3 messages using Channels 1 to 3 When Channel 4 receives an input, the volume is reduced by about 10 dB.
D Binary input/volume reduction mode	Plays back up to 7 messages using Channels 1 to 3 When Channel 4 receives an input, the volume is reduced by about 10 dB.
E Bit input/prioritized-message playback mode	Plays back up to 4 messages using Channels 1 to 4 If an audio message is input while another audio message is being played back, the current playback is stopped and the most recently input message is played back.
F Binary input/prioritized-message playback mode	Plays back up to 15 messages using Channels 1 to 4 If an audio message is input while another audio message is being played back, the current playback is stopped and the most recently input message is played back.
G Bit input/held-message playback mode	Plays back up to 4 messages using Channels 1 to 4 An audio message can be played back only while the input is held. The playback is stopped when the input ends.
H Binary input/held-message playback mode	Plays back up to 15 messages using Channels 1 to 4 An audio message can be played back only while the input is held. The playback is stopped when the input ends.
I Test playback	Plays back message No. 1



- Up to 87dB at 1 m
Able to produce a loud sound of 87 dB (at 1 m) despite being a slim, embedded-type annunciator.
- Volume control
Volume can be adjusted from the front.
- Memory card slot
Using an SD card allows for changing messages while leaving the unit mounted.

Options

PATLITE Playlist Editor (Free version)

(OS:Windows® 2000/XP/Vista)

- > PATLITE Playlist Editor software is required to change the audio message data.
- > The SD card does not contain the Playlist Editor or any audio messages.

SD card (128 MB) SDV-128P



BKV

Voice Annunciator



95dB at 1m
(Actual sound level may vary depending on sound type.)

63 Second

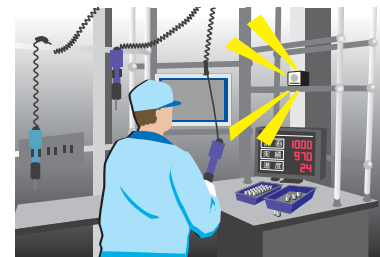
IP54
Upright direction only.

NPN Open Collector

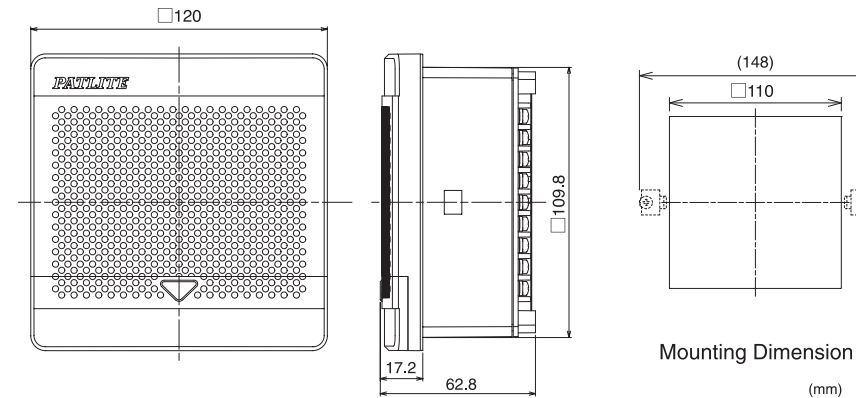
Excellent sound quality with MP3 playback! This panel-mounted MP3 voice annunciator uses SD cards,* allowing messages to be changed easily.

* SD card not included.

- Only embedded mounting style available.
- Able to produce a loud sound of up to 95 dB (at 1m) despite its compact size
- A volume control on the front panel provides an easy way to adjust the sound volume.
- The use of an SD card allows message changes without dis-mounting the device.
- Environmentally friendly since the unit complies with the EU RoHS Directives.
- Several playback modes are available for various applications.
- Includes binary input as a standard option for selecting up to 31 messages.
- Supports input selection using NPN open-collector transistor.
- The unit complies with EU Directives and includes the CE mark (BKV-31JF only)
- Two colors are available for selecting the best color match for the installation.
- Protection rating: IP54 (only the front when flush mounted)



Dimensions



Note: See page 177 for wiring diagram

How to Order

BKV-31JF-J

Model	Color
	J: Light Gray K: Dark Gray
Rated Voltage	
J: 12-24V DC K: 100V AC Q: 220V AC	

BKV Type

Model	Rated Voltage	Voltage Range	Power Consumption	Volume	Voice File	Relative Humidity	Maximum Playing Time	Number of Playing Messages	Protection Rating	Mass
BKV-31JF	12-24V DC	DC 10.8V~26.4V	9W	Max. 95dB (at 1m)	MPEG1-Audio Layer (mp3) Standard Bit Rate : 64kbit/s, Fs=44.1kHz	-10 ~ +50 (Less than 85%RH)	63sec	5 (Bit input) 31 (Binary input)	IP54 When flush mounted	0.35kg
BKV-31KF	100V AC	100V AC±10%	10W							0.53kg
BKV-31QF	220V AC	220V AC±10%	10W							0.53kg

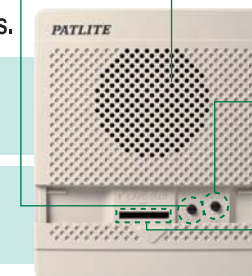
* Actual sound level will depend on sound type and operating conditions.

Slim High-volume Voice Annunciator

Mode Selector Switch

Several playback modes are available for various applications.

A Bit input mode	Plays back up to 5 messages using Channels 1 to 5
B Binary input mode	Plays back up to 31 messages using Channels 1 to 5
C Bit input/volume reduction mode	Plays back up to 4 messages using Channels 1 to 4 When Channel 5 receives an input, the volume is reduced by about 15 dB.
D Binary input/volume reduction mode	Plays back up to 15 messages using Channels 1 to 4 When Channel 5 receives an input, the volume is reduced by about 15 dB.
E Bit input/prioritized-message playback mode	Plays back up to 5 messages using Channels 1 to 5 If an audio message is input while another audio message is being played back, the current playback is stopped and the most recently input message is played back.
F Binary input/prioritized-message playback mode	Plays back up to 31 messages using Channels 1 to 5 If an audio message is input while another audio message is being played back, the current playback is stopped and the most recently input message is played back.
G Bit input/held-message playback mode	Plays back up to 5 messages using Channels 1 to 5 An audio message can be played back only while the input is held. The playback is stopped when the input ends.
H Binary input/held-message playback mode	Plays back up to 31 messages using Channels 1 to 5 An audio message can be played back only while the input is held. The playback is stopped when the input ends.
I Test playback	Plays back message No. 1



Up to 95 dB at 1 m

Able to produce a loud sound of 95 dB (at 1m) despite being a slim, embedded-type annunciator.

Volume control

Volume can be adjusted from the front.

Memory card slot

Using an SD card allows for changing messages while leaving the unit mounted.

Options

PATLITE Playlist Editor (Free version)

SD card (128 MB) SDV-128P

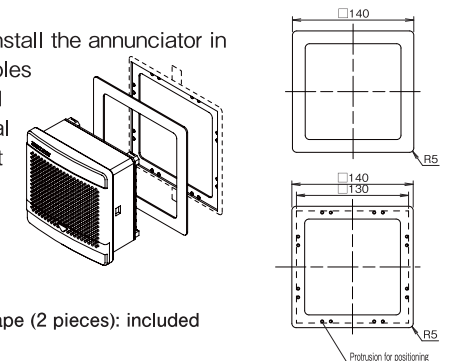


(OS: Windows® 2000/XP/Vista)

- > PATLITE Playlist Editor software is required to change the audio message data.
- > The SD card does not contain the Playlist Editor or any audio messages.

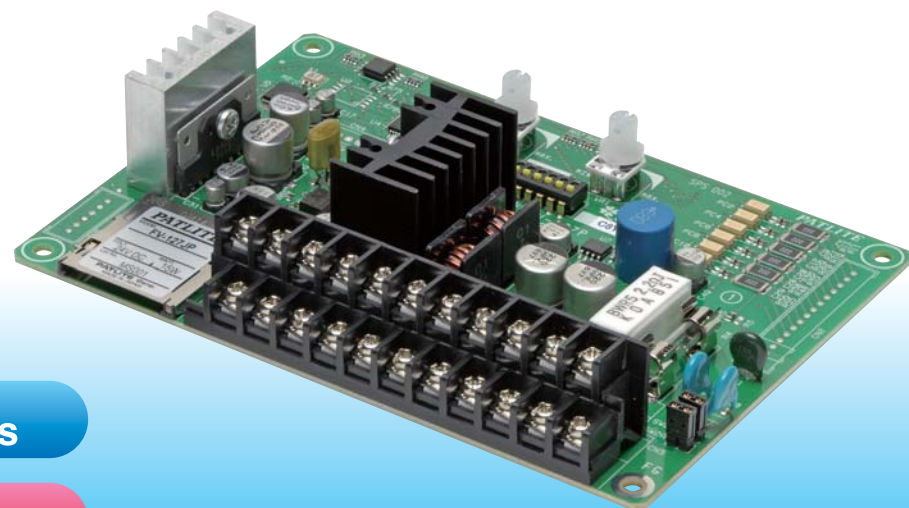
Optional bracket

This is used to install the annunciator in a place where holes have been drilled for a conventional PATLITE product (φ133 mm-type).



FV-127JP

MP3 File Playback Circuit Board



127 Channels

24V DC

NPN Open Collector

Audio messages can be registered on maximum 127 channels, ideal for various equipment or facility purpose where the audio message assistance is required.

High quality sound and long playback time

- MP3 compressed audio file format enables long playback time and high quality sound.
- Approx. 8 minute long audio message data can be stored in an internal memory.
- 240 minute long playback is possible when SD card is used as an external memory. (MP3 data at 64kbts/s with 128MB SD card)

Extraction and overwriting the audio messages

- Audio messages can be reprogrammed and overwritten easily with the playlist editor (included) and optional SD card. Also, the audio message data stored in the device can be extracted to SD card.

3 level volume reduction function

- Volume can be reduced at 3 levels by external signal input. (-10dB, -20dB, -30dB at 1m)

Various playback modes

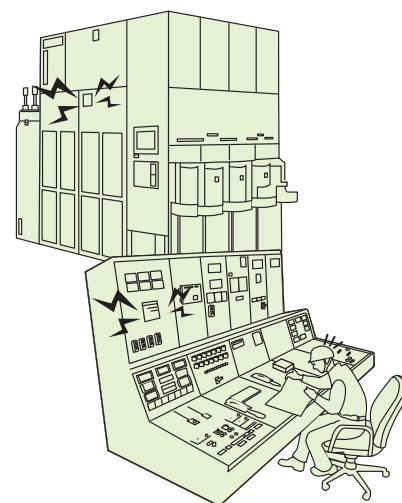
- 5 playback modes are available.

Highly reliable operation

- Duration of input loading can be selected. (10 or 50msec)
- Extending the duration of input loading enhances the noise resistance.
- Countermeasure against noise can be taken according to usage environment by noise countermeasure pin setting.

Other features

- Terminal block provides safe and secure wire connections.
- Speaker output (2W or 4W selectable), AUX output and BUSY output equipped.
- Rated voltage: 24V DC (Operating voltage range: 19 to 29V DC)
- This product is compliant with the RoHS directive (DIRECTIVE 2002/95/EC)

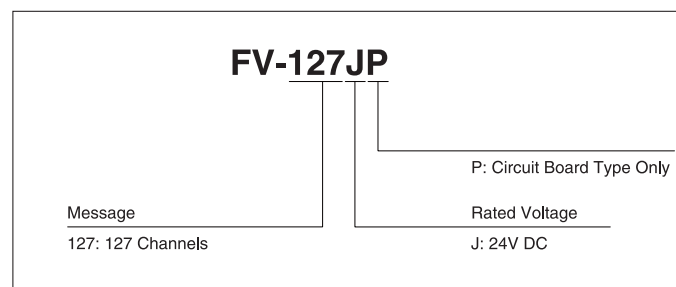


Playback Modes

Normal Playback	Designated audio message is played back by distinctive signal input. Audio message is played back once in case of one shot input, and audio message is repeated when the signal is input continuously.
Memory Playback	Up to 23 audio message inputs can be memorized in order of input. After one playback is finished, the next memorized audio message will be played back. The inputs exceeding the limit will not be memorized.
Latest Input Priority Playback	When the signal is input during the message playback, the audio message being played back will be stopped, and the previous audio message input will be played back.
Latest Input and Greater Channel Priority Playback	When the signal for greater channel number is input during the message playback, the audio message being played back will be stopped, and previous audio message input will be played back. When the signal for the same or smaller channel number is input, the signal will not be accepted.
Momentary Playback	Audio message is played back only while the signal input is maintained. Playback will be stopped when the signal input is stopped.

* Refer to the instruction manual or specifications for the details of playback mode.

How to Order



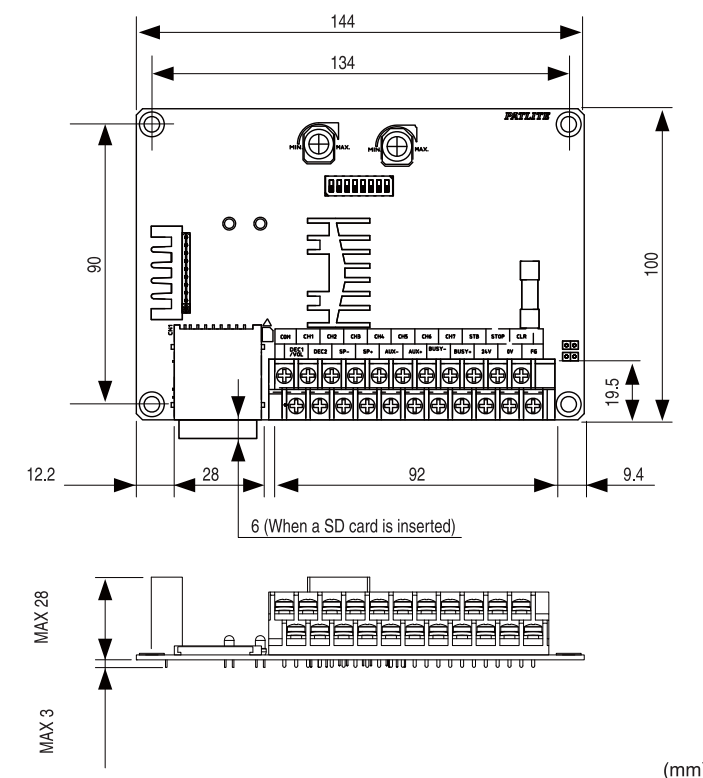
FV-127JP Type

General Specifications	
Model Name	FV-127JP
Rated Voltage	24V DC
Operating Voltage Range	19 to 29V DC
Wiring Method	M3 terminal block
Max. Power Consumption	15W (during -6dB 1kHz sine wave data playback)
Operating Temperature Range	-10 to 50
Storage Temperature	-40 to 80
Relative Humidity	85% RH or less
Usage Environment	Built-in only
Installation Method	4 screws
Vibration Resistance	45m/s ²
Mass	160g ± 10%
External Dimensions	144 × 100 × 28 [mm] (excluding lead dimensions)

Audio Specifications	
Number of Playback Messages	Binary input: 127 Bit input: 7
Audio File Format	MPEG1-Audio Layer (MP3)
Bit Rate	32kbit/s, 64kbit/s (standard), 128kbit/s: Fs = 44.1kHz
Max. Playback Time	When using an internal memory (3968KB): Approx. 8 minutes (when recording with a bit rate of 64kbit/s) When using external memory (SD card): Approx. 240 minutes with 128MB (when recording with a bit rate of 64kbit/s)
Unit Memory Size	3968KB
Audio Startup Time	Approx. 260ms
Audio Silence	If no user specification is defined, silence of 100ms or less is inserted before and after each item of audio data
Audio Rewriting	Possible with SD card + special software (PATLITE Playlist Editor)
Card Format	FAT16
Supported Memory Card	SDV-128P (sold separately)
Audio Rewriting Time	Approx. 180 seconds (when changing the 3968KB internal memory)

Input and Output Specifications	
Signal Input Area	CH1, CH2, CH3, CH4, CH5, CH6, CH7, STB, CLR, STOP, DEC1, DEC2
Signal Input Priority	CLR input > STOP input > CH input (priority from the highest channel number)
Sound Reduction Input	Speaker output, AUX output 3-level sound reduction: -10dB, -20dB, -30dB (during -6dB 1kHz sine wave data playback)
Input Loading Time	10ms or more, or 50 ms or more (setting can be selected)
Signal Input Area Circuit Characteristics	Non-voltage contact point or NPN open collector (Vce > 24V, Ice > 10mA)
Signal Input Area	4W (compliant speaker with rating of 4W or more and 8Ω or 2W (compliant speaker with rating of 2W or more and 8Ω Can be switched Output can be adjusted with the volume
Max. Sound Pressure	4W speaker output: 105dB During 2W: 102dB (during 1m -6dB 1kHz sine wave data playback using SPW-5E (optional speaker))
AUX Output	0dBV 600Ω (output can be adjusted with the volume or sound reduction input)
BUSY Output	Max. 40V DC 500mA

Dimensions



PVW

Voice Synthesizer

VOICE ADPCM64 kbit/s



105dB at 1m

64 sec

15 channels

IP53

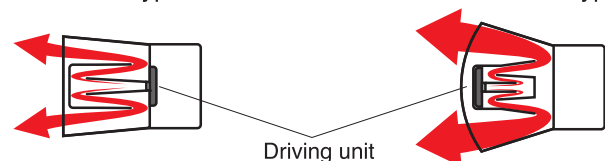
Horn-type Voice Synthesizer featuring 4 recordable messages up to 60 sec.

* PVW-04/-15 type: 4 or 15 selectable pre-installed messages up to 64 sec.

- Built-in Alarm: Adjustable audible sound volume up to 105dB at 1m with volume control.
- ADPCM 64kbit/s: Clear sound quality from LSI digital voice synthesizer for PVW type.
- Installation: Indoors—upright, inverted, sideways; Outdoors—upright only.
- Easy Installation: With anti-corrosive stainless steel mounting bracket.
- Conforms to the CE requirements (for 12/24V type only).

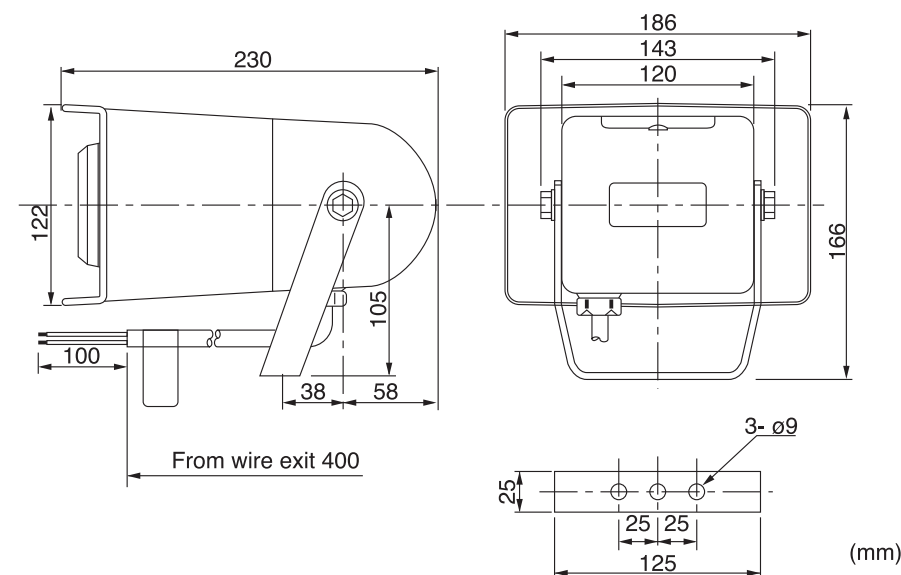
Concept of Horn Configuration.

- Conventional type
- New wide Horn Type

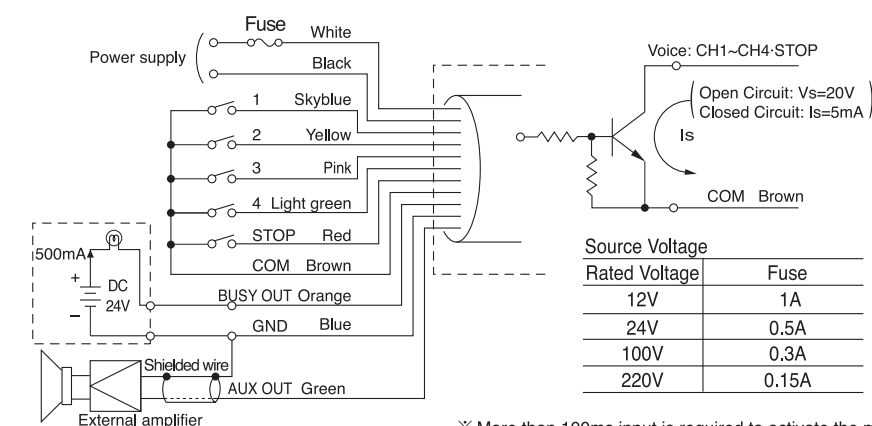


New design increases volume output by changing the location of the driving unit from the back to the front.

Dimensions



Wiring Diagram



※ More than 100ms input is required to activate the message.

Channel Priority

STOP (Red) > CH4 (Light green) > CH3 (Pink) > CH2 (Yellow) > CH1 (Skyblue)
 Note: The greater number has priority when any of the channels are activated simultaneously.

PVW Type

Model	Rated Voltage	Voltage Range	Power Consumption	Volume	Outer Contact Capacity	Operating Temperature Range	Auxiliary Input Channel	AUX Output	BUSY Output	Max Message Time	Protection	Mass
PVW-04JF	12/24V AC/DC	8~28V AC 9~35V DC	12W	Max. 105dB at 1m	More than 10mA	-10°C~+55°C Humidity 85% or less.	Voltage free contact 4/1bit	-10dBv 600Ω	Max. load 24V DC 500mA	63 sec.	IP53	1.3kg
PVW-04DF	48V DC	35V~60V DC	10W									1.3kg
PVW-04KF	100V AC	90V~132V AC	18W									1.4kg
PVW-04QF	220V AC	180V~260V AC	18W									1.4kg
PVW-15JF	12/24V AC/DC	8~28V AC 9~35V DC	12W	Max. 105dB at 1m	More than 10mA	-10°C~+55°C Humidity 85% or less.	Voltage free contact 15/binary	-10dBv 600Ω	Max. load 24V DC 500mA	63 sec.	IP53	1.3kg
PVW-15DF	48V DC	35V~60V DC	10W									1.3kg
PVW-15KF	100V AC	90V~132V AC	18W									1.4kg
PVW-15QF	220V AC	180V~260V AC	18W									1.4kg

Hybrid Products



LKEH



MP3 compatible annunciator with LED Signal Tower



105dB at 1m*

MP3 (LKEH-FV)

32 Sounds (LKEH-F□)

IP53

NPN Open Collector



*Actual sound level may vary depending on sound type.

Get the attention you need with PATLITE's Field Programmable LKEH series signal tower with audible alarm hybrid unit.

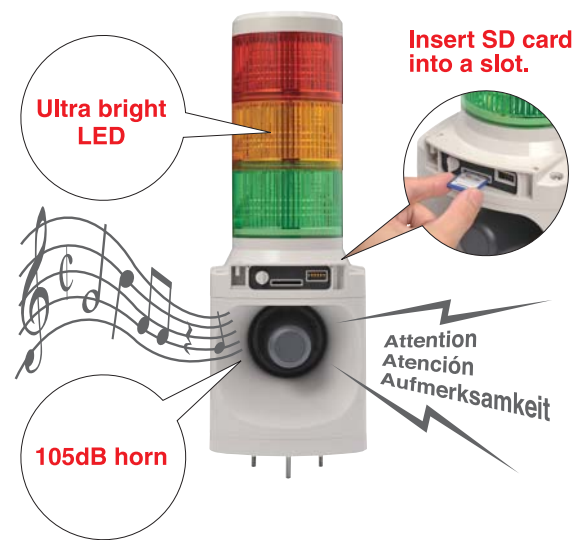
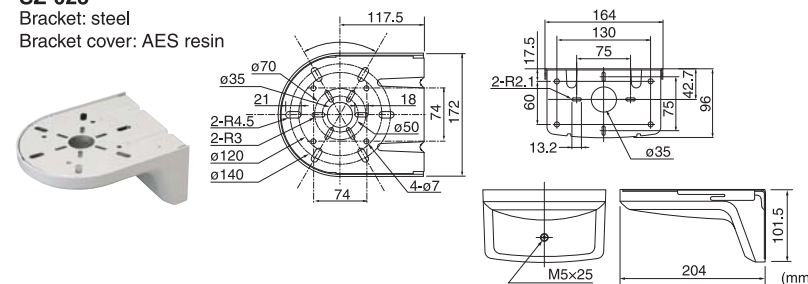
- Visible from great distance with ultra bright LEDs and 100mm diameter lens.
- Safe for use at high vibration environment with robust 2G vibration resistant design.
- Easy to control with only one common wire for both LEDs and audible signals.
- Field programmable with SD card. (Sold separately) (LKEH-FV)
Message capacity is up to 63 seconds (64kbit/s) with 5 channels by a bit input and 31 channels by binary input.
- Volume is adjustable from 0 to 105dB (at 1m) to fit various environments.
- Smooth LED lens surface.
- Conforms to the CE requirements (for 24V type).
- UL Listed (File No. E215660) (for 24V type only)

Available by Special Order

- PNP open collector transistor type.

Optional Parts

Wall mount bracket
SZ-023
Bracket: steel
Bracket cover: AES resin



Voice Synthesizer (LKEH-FV)

- Total recording time of up to 63 seconds (64kbit/s) can be divided up to 5 channels with a bit input, or 31 channels with binary input.

32 sounds are pre-recorded in one unit (LKEH-FA/FC/FD/FE)

- 32 sounds are pre-recorded in one unit. 4 sound types are available.
- 8 sounds can be played back by a bit input, and 32 sounds by binary input.



T-06B0152
T-0710139
T-0710140

Type A

Beep (slow intermittent horn)	Stutter (rapid intermittent horn)	Bell (clear high pitched bell)	Yelp (rapid siren)
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Stutter (rapid intermittent horn)	Synthesized Melody Chime	Chime	Call sign
Bell (clear high pitched bell)			
Fur Elise	Maiden's Prayer	Minuet	Annie Laurie
London Bridge is Falling Down	Holdiridia	Mary Had a Little Lamb	Camptown Races
Kuck kuck	Der Schmied im Walde	On the Bridge of Avignon	Daydream Believer
Amaryllis	Mozart Symphony No. 40	Itsy Bitsy Spider	Ich bin ein Musikante
Jeux Interdits	Katuscha	Grandfather's Clock	Ave Maria

Type D

Beep (slow intermittent horn)	Stutter (rapid intermittent horn)	Bell (clear high pitched bell)	Yelp (rapid siren)
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Runner	Mamotte Agetai	Chime	Call sign
Oribiao Kikinagara	A September	Doyoubino Koibito	Akino Kehai
Saafu Tengoku Sukii Tengoku	Iro Howaitoburendo	Happy Birthday	Hi Ho
I've been working on the Railroad	Bear Song	Toys Go Cha Cha Cha	Konnako Irukana
Wiegenlied	Rudolph the Red-nosed Reindeer	She Wore a Yellow Ribbon	Oh My Darling Clementine
Yellow Rose of Texas	Yankee Doodle	When the Saints Go Marching In	Londonderry Air

Type C

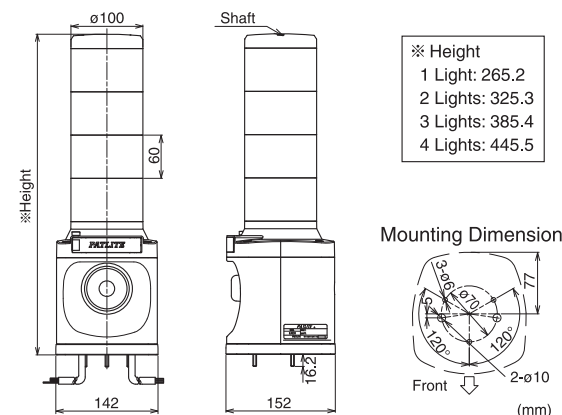
Beep (slow intermittent horn)	Stutter (rapid intermittent horn)	Bell (clear high pitched bell)	Yelp (rapid siren)
Rapid Hi-Lo	Melody Chime	Synthesized Piano	Synthesized Bell
Stutter (rapid intermittent horn)	Synthesized Melody Chime	Chime	Call sign
Bell (clear high pitched bell)			
Can't Take My Eyes off of You	Top of the World	The Entertainer	Amazing Grace
Amairono Kamino Otome	Les Champs-Elysees	Canon	Rara Sanshain
Uchuusenkan Yamato	Oshiete	Makenaide	Gonna Fly Now (Theme for 'Rocky')
I Don't Want to Miss a Thing	Yozorano Mukou	Aiwa Katsu	Haruyo Koi
Gattsudaze	Odoru Ponpokorin	Imasugu Kisu Mi	Truth

Type E

Beep (slow intermittent horn)	Stutter (rapid intermittent horn)	Inverted Receille	Annie Laurie
Stutter (rapid intermittent horn)	Synthesized Melody Chime	Galactic Motor	London Bridge is Falling Down
Bell (clear high pitched bell)	Chime	Ringling Phone	Mary Had a Little Lamb
Yelp (rapid siren)	Call Sign	Two Tone	Camptown Races
Rapid Hi-Lo	Train Ride	Alarm Clock	Amaryllis
Melody Chime	Galloping Hi-Lo	Ringling Hi-Lo	Mozart Symphony No.40
Synthesized Piano	Alien Chatter	Fur Elise	Ave Maria
Synthesized Bell	Falling Crystals	Minuet in G	Grandfather's Clock

PATLITE Corporation has not applied for permission to use certain copyrighted music or songs recorded in LKEH-FA, FC and FD types outside of Japan; therefore, please contact the local copyright association for permission before using the product in case this product is used outside of Japan. LKEH-FE type is recommended for use outside of Japan as this model does not include copyrighted music or songs, and the permission is not require.

Dimensions



How to Order

LKEH-402FVUL-RYGB	
Model	Color
Stack	R: Red Y: Amber G: Green B: Blue C: Clear/White Top to bottom
Rated Voltage	Standard conformity UL: UL Standard
02: 24V DC	Type
10: 100V AC	FV: Voice Synthesizer
20: 220V AC	FA, FC, FD, FE: 32 sounds

Note: See page 176 for wiring diagram

LKEH-FV Type

Voice Type	Model	60 flashes per minute				
		Rated Voltage	Voltage Range	Number of stacks	Power Consumption	Mass
24V DC	LKEH-102FV	24V DC	24V DC±10%	1	10.6W	1.4kg
	LKEH-202FV			2	12.4W	1.6kg
	LKEH-302FV			3	14.2W	1.8kg
	LKEH-402FV			4	16W	2.0kg
100V AC	LKEH-110FV	100V AC	100V AC±10%	1	17W	2.1kg
	LKEH-210FV			2	20W	2.3kg
	LKEH-310FV			3	23W	2.5kg
	LKEH-410FV			4	26W	2.7kg
220V AC	LKEH-120FV	220V AC	220V AC±10%	1	17W	2.1kg
	LKEH-220FV			2	20W	2.3kg
	LKEH-320FV			3	23W	2.5kg
	LKEH-420FV			4	26W	2.7kg

LKEH-F□ Type

Sound Type	Model	60 flashes per minute				
		Rated Voltage	Voltage Range	Number of stacks	Power Consumption	Mass
24V DC	LKEH-102FA/FC/FD/FE	24V DC	24V DC±10%	1	10.6W	1.4kg
	LKEH-202FA/FC/FD/FE			2	12.4W	1.6kg
	LKEH-302FA/FC/FD/FE			3	14.2W	1.8kg
	LKEH-402FA/FC/FD/FE			4	16W	2.0kg
100V AC	LKEH-110FA/FC/FD/FE	100V AC	100V AC±10%	1	17W	2.1kg
	LKEH-210FA/FC/FD/FE			2	20W	2.3kg
	LKEH-310FA/FC/FD/FE			3	23W	2.5kg
	LKEH-410FA/FC/FD/FE			4	26W	2.7kg
220V AC	LKEH-120FA/FC/FD/FE	220V AC	220V AC±10%	1	17W	2.1kg
	LKEH-220FA/FC/FD/FE			2	20W	2.3kg
	LKEH-320FA/FC/FD/FE			3	23W	2.5kg
	LKEH-420FA/FC/FD/FE			4	26W	2.7kg

RFT

Audible Alarm with LED Revolving Warning Light



90dB at 1m

(Actual sound level may vary depending on sound type.)

IP54

(front direction only)

NPN
Open Collector



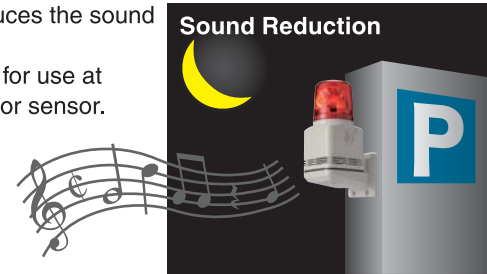
Total of 32 pre-stored alarm sounds! This LED rotating light with built-in electronic alarm sounds can be controlled by both binary and bit input signals.

- Produces a loud sound up to 90dB (at 1 m)
- The volume can be reduced by about 10dB (at 1 m) when an input signal is received (Binary Mode only).
- A volume control on the side panel provides an easy way to adjust the sound volume.
- The use of an SD card allows one sound group to be re-arranged by the user using any of the pre-installed sounds.
- Environmentally friendly since the unit complies with the EU RoHS Directives.
- Supports input selection using NPN open-collector transistor.
- Conforms to the CE requirements (for 24V type).

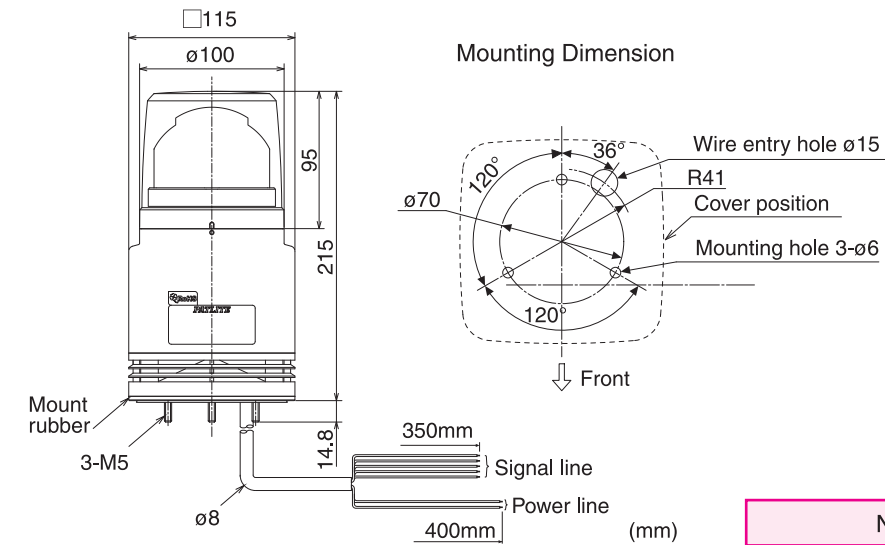
Side access design enables easy post-installation maintenance



Sound reduction function reduces the sound volume by approx. 10dB (at 1m). This function is ideal for use at night time together with timer or sensor.



Dimensions



Note: See page 179 for wiring diagram

How to Order

RFT-24A-R

Rated Voltage	Color of revolving light
24: 24V DC	R: Red
100: 100V AC	Y: Yellow
220: 220V AC	G: Green
Sound Type	B: Blue
A: A type	
C: C type	
D: D type	
E: E type	

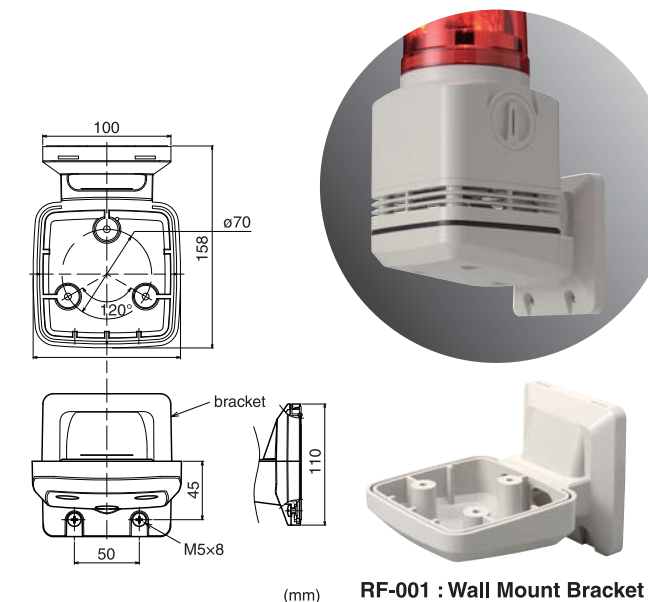
RFT Type

Model	Rated Voltage	Voltage Range	Power Consumption	Volume	Number of Playback Sounds	Operating Temperature Range	Flashes per Minute	Mass	Protection Rating
RFT-24	24V DC	24V DC±10%	12W	Max. 90dB (at 1m)	Bit input mode: 8 sounds Binary input mode: 32 sounds	-10 ~ +50 (Less than 85%RH)	115±15回/分	1.0kg	IP54 (when flush mount, front direction only)
RFT-100	100V AC	100V AC±10%	13W					1.2kg	
RFT-220	220V AC	220V AC±10%	13W					1.2kg	

* Sound pressure level may be lower depending on the sound and usage environment. It is very difficult to synchronize the play back of the same sound from different units.

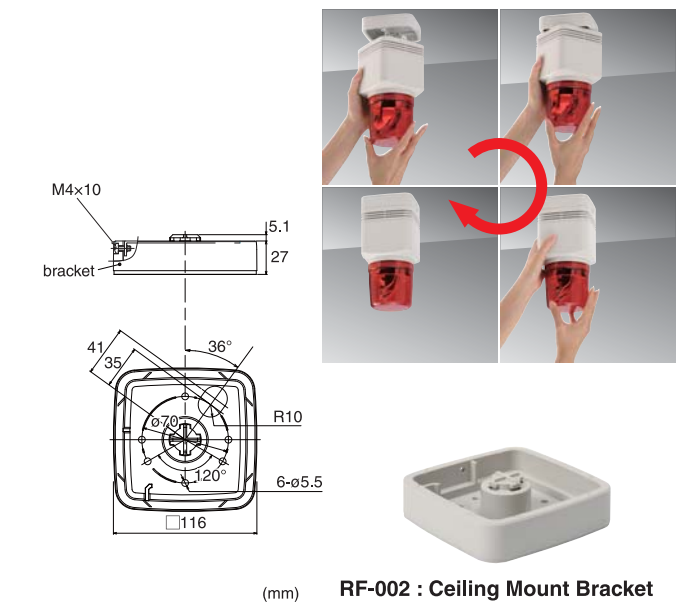
Optional Bracket

Wall Mount Style



(mm) RF-001 : Wall Mount Bracket

Ceiling Mount Style



(mm) RF-002 : Ceiling Mount Bracket

RFV

MP3 compatible annunciator with LED Revolving Warning Light



RFV



95dB at 1m

(Actual sound level may vary depending on sound type.)

IP54

(front direction only)

NPN Open Collector

The RFV series is a combination of LED rotating beacon light and MP3 programmable sound unit.

- Field programmable with SD card. (Sold separately)
Message capacity of up to 64 seconds (64kbit/s) can be played back by a bit input (4 channels) or binary input (15 channels).
- Volume is adjustable from 0 to 95dB (at 1m) to fit various environments.
- Safe for use at high vibration environments with a robust 4.5G vibration resistant design.
- Unique Features :
 1. Reduced maintenance with long service-life power LED that lasts over 5 years with 24/7 continuous operation.
 2. High visibility with Special Optical Reflector.
 3. Special gear driven mechanism provides reliable operation even after 10 years of no operation.
 4. Tight Locking Dome will stay on even in high vibration situations.
 5. Inverted Installation.
- Conforms to the CE requirements (for 24V type).

Available by Special Order

- PNP open collector transistor type.

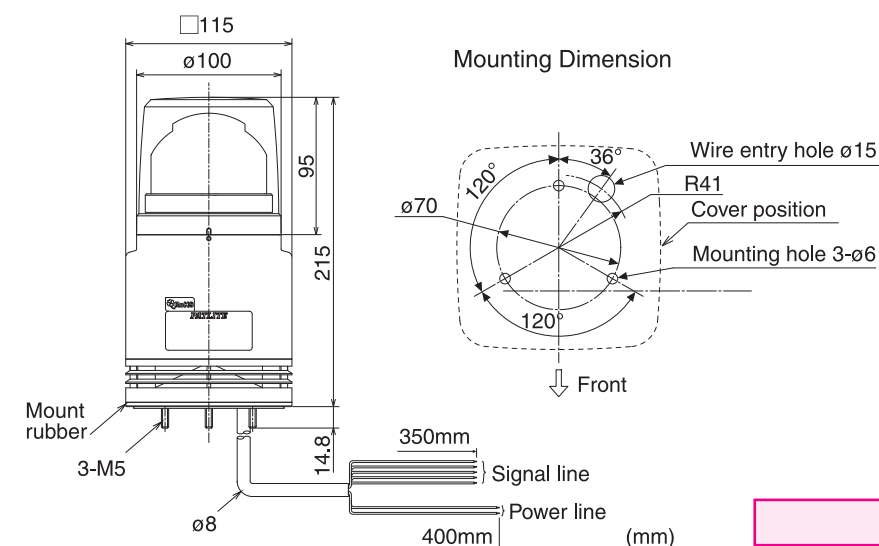
Voice message is field recordable with SD card (sold separately), and sound volume also can be changed easily from side panel even after installation.



Sound reduction function reduces the sound volume by approx. 15dB (at 1m). This function is ideal for use at night time together with timer or sensor.



Dimensions



Note: See page 179 for wiring diagram

How to Order

RFV-100F-R

Rated Voltage	Color
24: 24V DC	R: Red
100: 100V AC	Y: Amber
220: 220V AC	

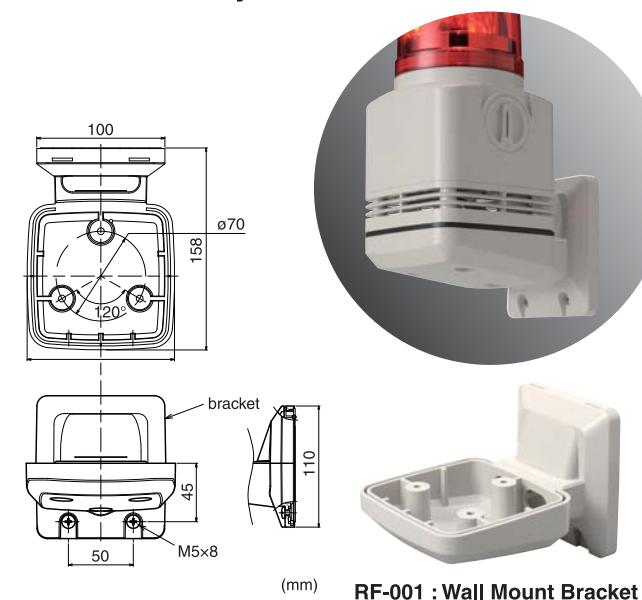
RFV Type

Model	Rated Voltage	Voltage Range	Power Consumption	Flashes per Minute	Volume	Audio File Type	Operating Temperature Range	Message Time	Channel	Protection Rating	Mass
RFV-24F	24V DC	24V DC $\pm 10\%$	Max. 18W	115 ± 15	Max. 95dB at 1m*	MPEG1-Audio Layer III (mp3) bit Rate: 64kbit/s, Fs=44.1kHz	-10°C~+50°C (Humidity 85% or less)	Max. 63 seconds	4 (bit input) or 15 (binary input)	IP54 (when flush mount, front direction only)	1.0kg
RFV-100F	100V AC	100V AC $\pm 10\%$	Max. 16W								1.2kg
RFV-220F	220V AC	220V AC $\pm 10\%$									

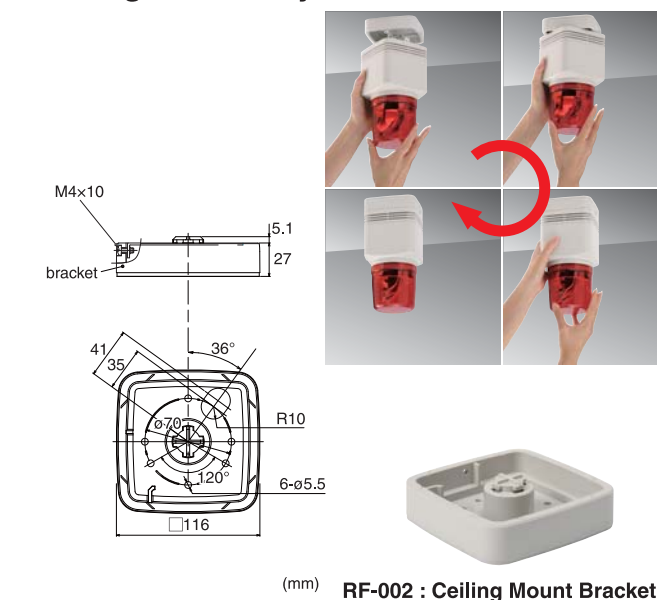
Actual sound level will depend on sound type and operating conditions.
* The play back sound may not be synchronized in case the multiple units are activated simultaneously.

Optional Bracket

Wall Mount Style



Ceiling Mount Style



WG



MP3 compatible annunciator with LED Signaling Light



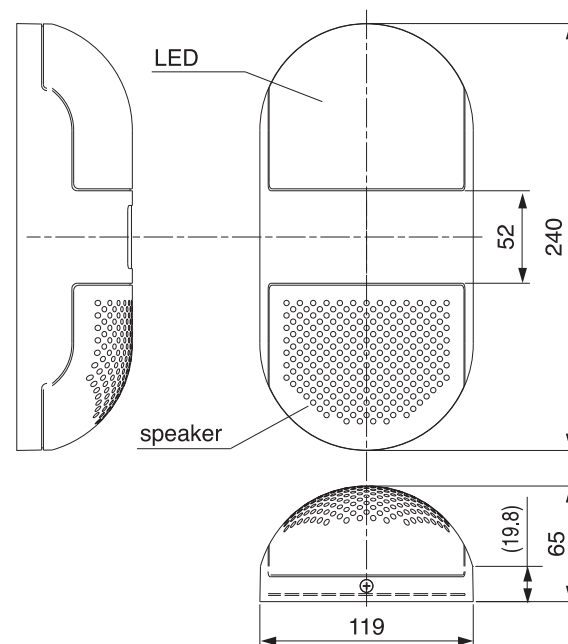
- 90dB at 1m**
(Actual sound level may vary depending on sound type.)
- 32 Second**
- 3 messages**
- NPN Open Collector**

The WG series is wall mountable and will easily blend into any environment such as hospitals, airports and office buildings, providing audible messages and visual signal with LED.

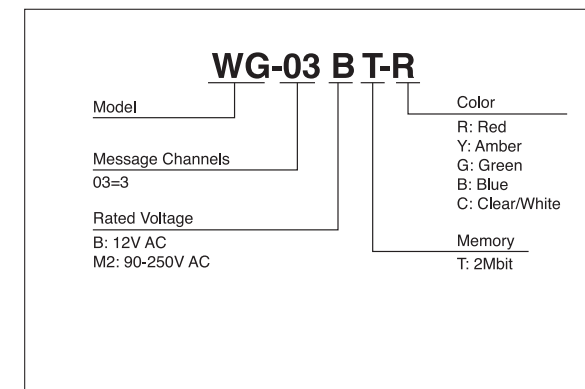
- Colors available: red, yellow, green, blue and clear/white.
- Alert operators or the public with voice messages or chimes or any other sound and flashing LED light.
- Effective for audio/visual guidance at public facilities such as train platforms, bathrooms, etc.
- Record your own messages using Patlite's Playlist Editor, and MP3 sound files or use Patlite's custom recording services.
- High quality sound with a max. output of 90dB (at 1m) provide clear messages, even in a crowd.
- 3 message channels for various applications.
One channel has priority for emergency/security purposes.
- Has 3 messages for a total of 32 seconds.
- NPN open collector transistor compatible
- 12V DC or 90-250V AC



Dimensions



How to Order



WG Type

Model	WG-03BT	WG-03M2T
Rated Voltage	12V DC (No Polarity)	90-250V AC
Power Consumption: Standby	1Watt	1Watt
Power Consumption: Operation	6Watt Max	6Watt Max
Lens Colors Available	None, Red, Amber, Green, Blue	None, Red, Amber, Green, Blue
Operating Temperature Range	-10°C~+60°C	-10°C~+60°C
Volume	90dB at 1m (Adj.from zero)	90dB at 1m (Adj.from zero)
Message Memory Capacity	32 seconds @ 64kbts/sec	32 seconds @ 64kbts/sec
No. of Messages (Inputs)	3	3
Protection Rating	IP20	IP20
Illuminance	300lx at 50cm	300lx at 50cm
Mounting Direction	Horizontal, Vertical (Up or Down)	Horizontal, Vertical (Up or Down)
Vibration Resistance	19.6m/s ²	19.6m/s ²
Mass	600g	600g

RT

Voice Synthesizer



Bulb



105dB at 1m

IP23

NPN Open collector

Large horn with revolving warning light featuring clear sound up to 105dB at 1m.

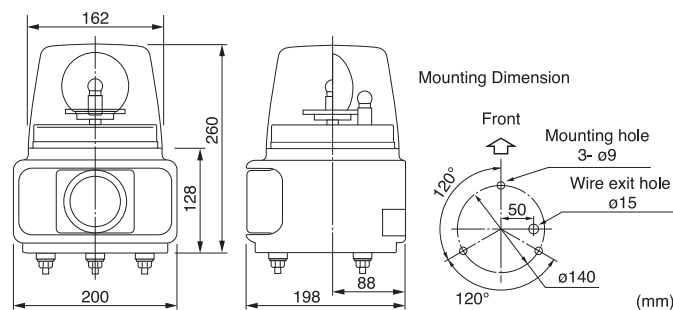
- Built-in Alarm: Adjustable audible sound up to 105dB at 1m with volume control.
- MP3: High sound quality from digital voice synthesizer (RT-VF only)*.
- Installation: Upright only.
- Dome: Superior weather resistant and light translucent acrylic resin.
- Available Colors: Red, Amber, Green, Blue.
- Conforms to the CE requirements (for 24V type).

* RT-VF uses the MP3 format.

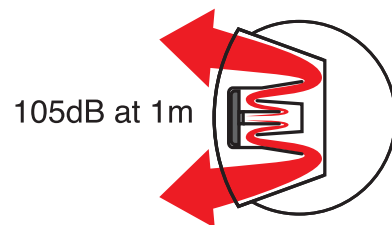
Available by Special Order

- Cabtyre Cable: Versatile and flexible 3m cable.
- IP65.
- 120V AC.

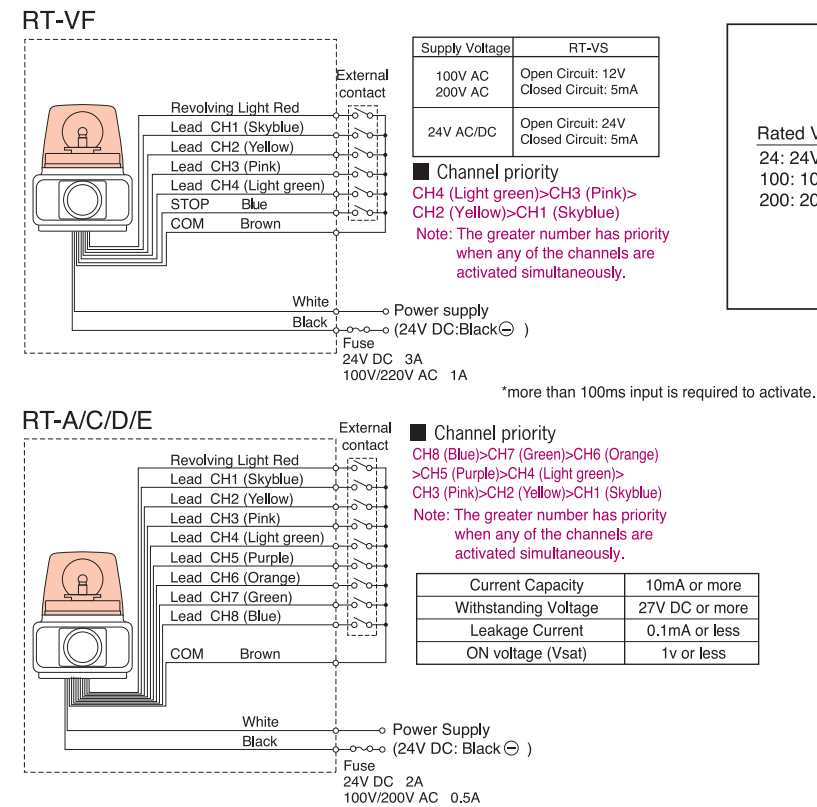
Dimensions



Concept of Horn Configuration.



Wiring Diagram



How to Order

RT-24VF-R		Color
Rated Voltage	24: 24V DC 100: 100V AC 200: 200V AC	R: Red Y: Amber G: Green B: Blue
Sound	VF: Voice Synthesizer A: Type A C: Type C D: Type D E: Type E	

RT Type

Model	Rated Voltage	Voltage Range	Power Consumption	Bulb	No.	Rotations per Minute	Volume	External Contact Capacity	Operating Temperature Range	Auxiliary Input	Channel	Max Message Time	Mass	
Voice type	RT-24VF	24V DC	21V~27V DC	24W	24V 20W	55	115	Max. 105dB at 1m	More than 10mA	-10°C~+50°C Humidity 85% or less.	Voltage free contact 6/1bit	4(Bit input) 15(Binary input)	63 sec.	2.0kg
	RT-100VF	100V AC	90V~110V AC	32W	12V 15W	54	105							
	RT-200VF	220V AC	180V~240V AC	30W	12V 15W	54	95							
Sound type	RT-24A/C/D/E	24V DC	21V~27V DC	24W	24V 20W	55	115	Max. 105dB at 1m	More than 10mA	-20°C~+55°C Humidity 85% or less.	Voltage free contact 9/1bit	8/1 impulsion 32/binaire	—	2.0kg
	RT-100A/C/D/E	100V AC	90V~110V AC	32W	12V 15W	54	105							
	RT-200A/C/D/E	200V AC	180V~240V AC	30W	12V 15W	54	95							

Sounds Selection Chart

32 sounds are pre-recorded in one unit. 4 sound types are available.

RT-E type

Beep (slow intermittent horn)	Stutter (rapid intermittent horn)	Inverted Receille	Annie Laurie
Stutter (rapid intermittent horn)	Synthesized Melody Chime	Galactic Motor	London Bridge is Falling Down
Bell (clear high pitched bell)	Chime	Ringin Phone	Mary Had a Little Lamb
Yelp (rapid siren)	Call Sign	Two Tone	Camptown Races
Rapid Hi-Lo	Train Ride	Alarm Clock	Amaryllis
Melody Chime	Galloping Hi-Lo	Ringin Hi-Lo	Mozart Symphony No.40
Synthesized Piano	Alien Chatter	Fur Elise	Ave Maria
Synthesized Bell	Falling Crystals	Minuet in G	Grandfather's Clock

PATLITE Corporation has not applied for permission to use certain copyrighted music or songs recorded in RT-A, C and D types outside of Japan. Therefore, please contact the local copyright association for permission before using the product in case this product is used outside of Japan. RT-E type is recommended for use outside of Japan as this model does not include copyrighted music or songs, and permission is not required.

KJPV / KJT

Voice Synthesizer / Melody Alarm



Bulb

KJPV 95dB at 1m
KJT 95dB at 1m

□116

IP23

NPN
Open collector

Multi-layer Revolving Warning Lights combined with integrated voice synthesizer or melody alarm for various applications.

- Built-in Alarm: Adjustable audible sound up to 95dB at 1m* with volume control.
- ADPCM 64kbit/s: High sound quality from LSI digital voice synthesizer (KJPV).
- Sound Pattern: 4 messages in 16 sec. for KJPV, 8 sounds for KJT (KJT-L: 6 melodies & 2 chimes, KJT-K: 8 alarms).
- Alarm and light signal units can be replayed together or separately.
- Installation: Upright only.
- Lens: Superior weather resistant and light translucent acrylic resin.
- Available Colors: Red, Amber, Green, Blue.



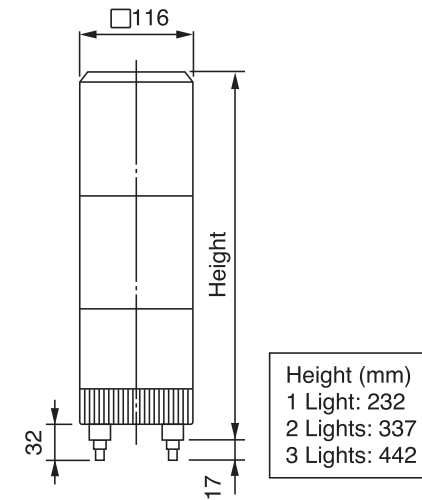
* KJT type: 90dB at 1m

KJT-E type

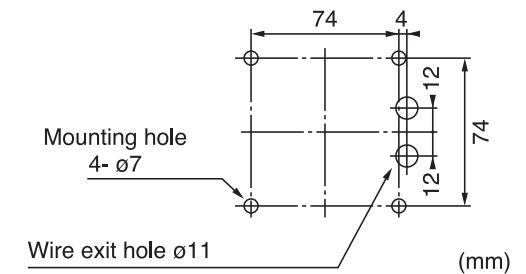
Beep (slow intermittent horn)	Stutter (rapid intermittent horn)	Inverted Receille	Annie Laurie
Stutter (rapid intermittent horn)	Synthesized Melody Chime	Galactic Motor	London Bridge is Falling Down
Bell (clear high pitched bell)	Chime	Ringin Phone	Mary Had a Little Lamb
Yelp (rapid siren)	Call Sign	Two Tone	Camptown Races
Rapid Hi-Lo	Train Ride	Alarm Clock	Amaryllis
Melody Chime	Galloping Hi-Lo	Ringin Hi-Lo	Mozart Symphony No.40
Synthesized Piano	Alien Chatter	Fur Elise	Ave Maria
Synthesized Bell	Falling Crystals	Minuet in G	Grandfather's Clock

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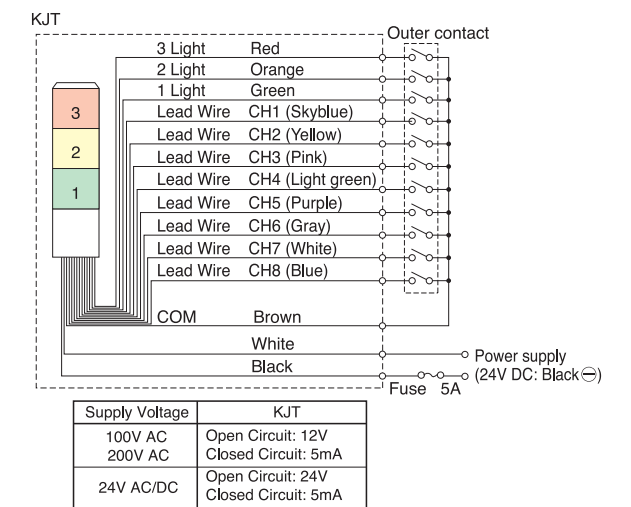
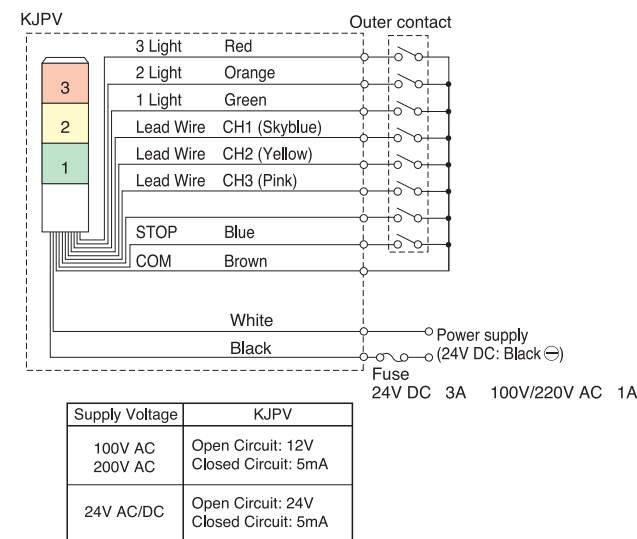
Dimensions



Mounting Dimension



Wiring Diagram



Channel priority

CH4 (Light green)>CH3 (Pink)>
CH2 (Yellow)>CH3 (Skyblue)
Note: The greater number has priority when any of the channels are activated simultaneously.

Channel priority

CH8 (Blue)>CH7 (White)>CH6 (Gray)
>CH5 (Purple)>CH4 (Light green)>
CH3 (Pink)>CH2 (Yellow)>CH1 (Skyblue)
Note: The greater number has priority when any of the channels are activated simultaneously.

KJPV / KJT Type

Model	Rated Voltage	Voltage Range	Power Consumption	Bulb	Rotations per Minute	Volume	External Contact Capacity	Operating Temperature Range	Auxiliary Input	Channel	Mass
Voice	1 stack	24V DC	20V~27V DC	20W	24V 10W	10	Max. 95dB at 1m	More than 10mA	-10°C~+55°C Humidity 85% or less.	Voltage free contact 5/1bit	1.4kg
	2 stacks	100V AC	90V~110V AC	20W	12V 5W	12				Voltage free contact 6/1bit	1.7kg
		220V AC	180V~240V AC	20W	12V 5W	12				Voltage free contact 7/1bit	2.0kg
		24V DC	20V~27V DC	30W	24V 10W	10				Voltage free contact 8/1bit	2.4kg
	3 stacks	100V AC	90V~110V AC	26W	12V 5W	12				Voltage free contact 9/1bit	2.6kg
		220V AC	180V~240V AC	26W	12V 5W	12				Voltage free contact 10/1bit	3.0kg
24V DC		20V~27V DC	40W	24V 10W	10	Voltage free contact 11/1bit	2.6kg				
-K: Alarm	1 stack	100V AC	90V~110V AC	20W	12V 5W	12	Max. 90dB at 1m	More than 10mA	-20°C~+50°C Humidity 85% or less.	Voltage free contact 9/1bit	1.4kg
		200V AC	180V~240V AC	20W	12V 5W	12				Voltage free contact 10/1bit	1.7kg
		24V AC/DC	21V~27V AC/DC	36W/28W	24V 10W	10				Voltage free contact 11/1bit	2.0kg
	2 stacks	100V AC	90V~110V AC	26W	12V 5W	12				Voltage free contact 12/1bit	2.4kg
		200V AC	180V~240V AC	26W	12V 5W	12				Voltage free contact 13/1bit	2.6kg
		24V AC/DC	21V~27V AC/DC	47W/38W	24V 10W	10				Voltage free contact 14/1bit	3.0kg
3 stacks	100V AC	90V~110V AC	32W	12V 5W	12	Voltage free contact 15/1bit	2.6kg				
	200V AC	180V~240V AC	32W	12V 5W	12	Voltage free contact 16/1bit	3.0kg				
	24V AC/DC	21V~27V AC/DC	47W/38W	24V 10W	10	Voltage free contact 17/1bit	3.0kg				

© Special order

Optional Parts

Mounting Pole

φ50 (φ40)

SZ-60L
SZ-80L

Includes SZ-012

SZ-60T

Includes SZ-011

SZ-70L

Includes SZ-013

φ60

SZ-40L

Includes SZ-013

SZ-40T

Includes SZ-010

φ70

SZ-50L

Includes SZ-013

SZ-50T

Includes SZ-010

φ70

SZ-30L

Includes SZ-013
Can not use Rubber Gasket.

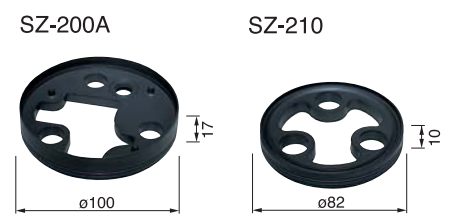
SZ-30T

Includes SZ-010
Can not use Rubber Gasket.

Model	Material					
	Upper bracket	Pole	L Bracket	Cord bushing	Mounting Bracket	Compatible Model
SZ-80L	ABS resin	Carbon steel pipe	SPHC	6/6 nylon	-	LCE-W
SZ-60L	ADC12	Carbon steel pipe	SPHC	6/6 nylon	-	LE-W LES-AW
SZ-60T	ABS resin	-	-	-	ADC12	-
SZ-70L	ABS resin	Carbon steel pipe	SPHC	EPT	-	LME-W
SZ-50L	ADC12	Carbon steel pipe	SPHC	EPT	-	LU7 LHE-A
SZ-50T	ADC12	-	-	-	ADC12	-
SZ-40L	ADC12	Carbon steel pipe	SPHC	EPT	-	KUS
SZ-40T	ADC12	Carbon steel pipe	-	-	ADC12	-
SZ-30L	ABS resin	Carbon steel pipe	SPHC	EPT	-	RLE,RU RH,PS PES
SZ-30T	ABS resin	-	-	-	ADC12	-

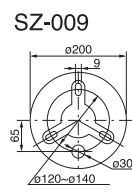
ADC12 ··· Aluminum alloy die-cast SPHC ··· Hot rolled mild (sheet) steel
EPT ··· Ethylene propylene rubber

Rubber Gasket



Model	Material	Compatible Model
SZ-200A	Ethylene Propylene Rubber	KX, RH(B)
SZ-210		RU, RLE, PS(F), PSX, PES

Tripod stand



Model	Size φ	Height
SZ-009	Pitch diameter φ120~φ140	1,285~2,285mm

Upper Bracket For LU7

Upper Bracket For LU5

Pole

Steel Pole

800mm : **POLE-800S21**
300mm : **POLE-300S21**
100mm : **POLE-100S21**

Aluminum Pole

800mm : **POLE-800A21**
300mm : **POLE-300A21**
100mm : **POLE-100A21**

NPT Adapter

Mounting Bracket

SZ-010
(For φ21.7mm pole)

SZ-011
(For φ17.3mm pole)

SZ-016A
(For φ21.7mm pole)

SZ-70-B
(For φ21.7mm Aluminum Pole Only)

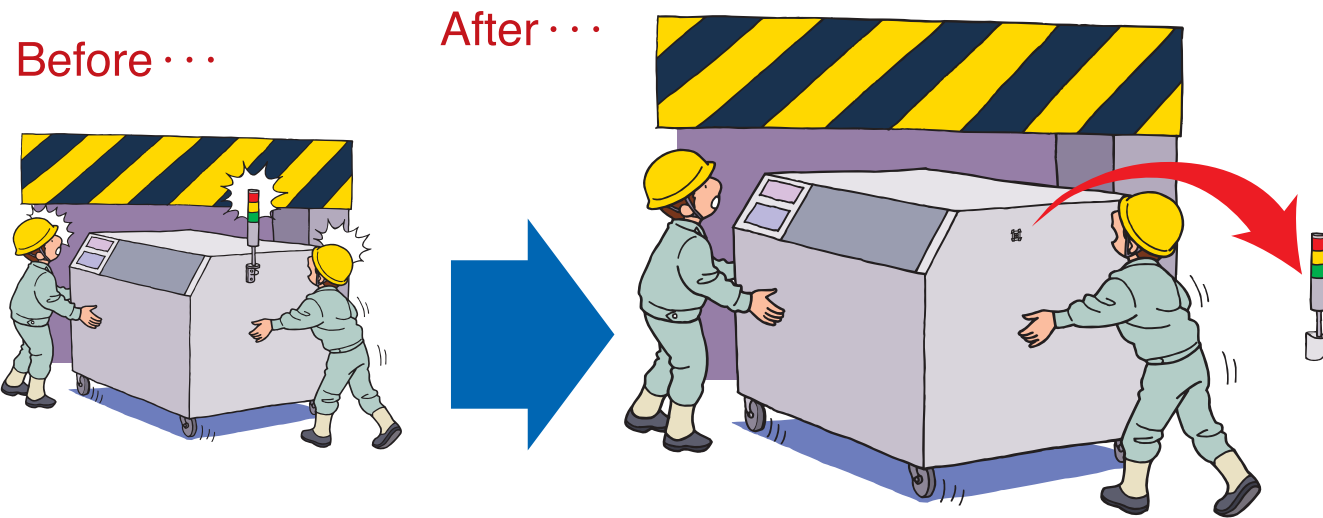
SZ-014

Model	Material	Compatible Model
SZ-010	Aluminum alloy die-cast	STD, RUP, LME, LMS, LHE
SZ-011		LCE, LCS, LE, LES-A
SZ-016A		LU5, LU7, STD, RUP, LME, LMS, LHE
SZ-70-B		-
SZ-014	Cold rolled milled steel	LE, LES-A

Optional Parts

Wall Mount Bracket

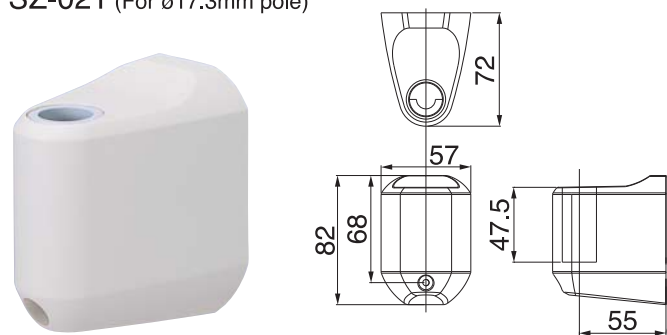
- Bracket is detachable from machinery by loosening a screw and taking off the connectors.
- Bracket can be removed or installed upside-down during transportation.
- Wiring should not be exposed.
- Silver color type: available as a special order.



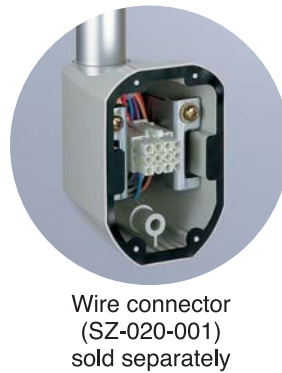
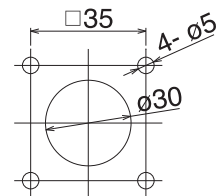
How to install



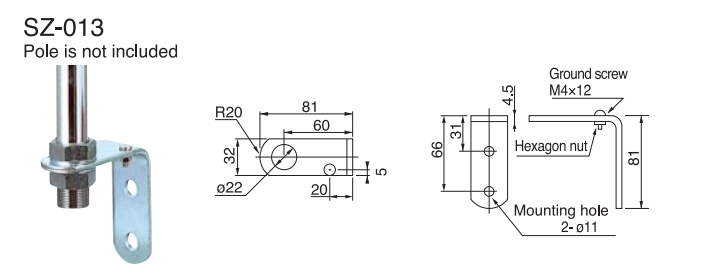
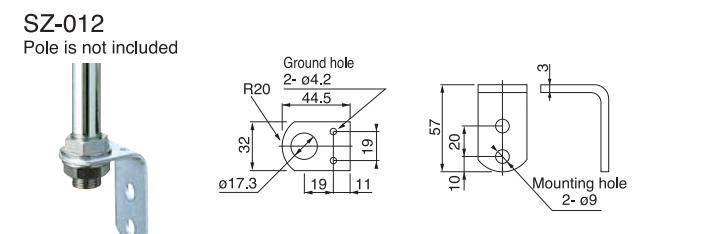
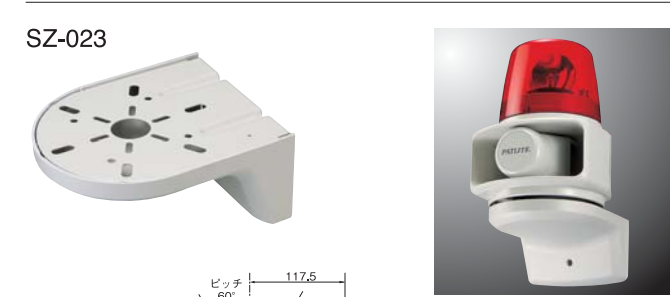
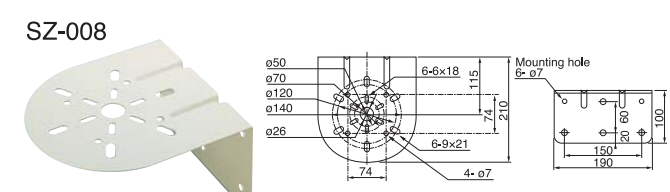
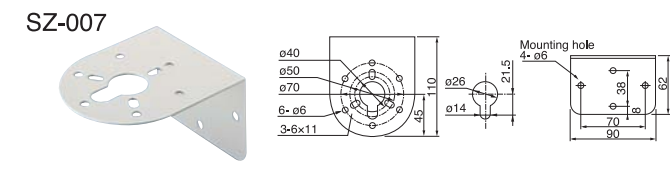
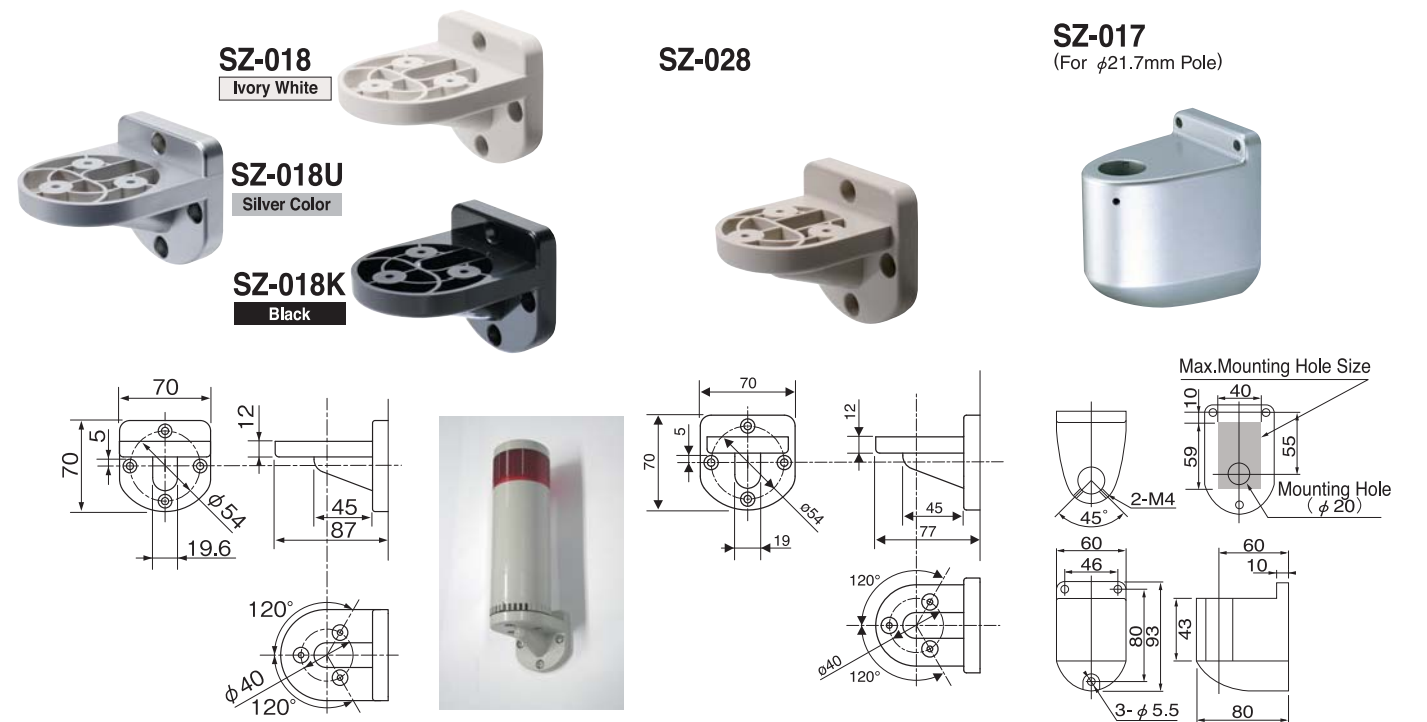
SZ-020 (For ø21.7mm pole)
SZ-021 (For ø17.3mm pole)



Mounting dimensions



Wall Mount Bracket



Model	Material	Compatible Model
SZ-017	Aluminum alloy die-cast	LME, STD, RUP
SZ-018	PBT/ABS resin	LU7, LHE
SZ-028		LME
SZ-020	ABS resin	LU5, LU7, LME, LMS, RUP, STD
SZ-021		LC, LCS, LE, LES-A
SZ-007	Electro-galvanized steel	LU7, LHE-A Pitch diameter ø50, 70
SZ-008		Pitch diameter ø50, 70, 120, 140 and □74
SZ-023	Bracket: Steel Bracket cover: ABS resin	Pitch diameter ø50, 70, 120, 140 and □74
SZ-012	Hot rolled mild steel	LCE, LCS, LE, LES
SZ-013		LME, STP, ME, MP

Replacement Bulbs

Model	Bulb No.	Wattage	Part No.
RP35/BA15S	1	12V35W	D01203501-F1
	2	24V35W	D02403501-F1
RP35/BA15D	5	48V35W	D04803502-F1
G18/BA15S	8	6V3W	D00600303-F1
	9	12V10W	D01201003A-F1
	10	24V10W	D02401003A-F1
	11	48V10W	D04801003-F1
	12	12V5W	D01200503A-F1
T20/E12	13	30V10W	D03001006A-F1
	14	110V10W	D11001006A-F1
	15	220V10W	D22001006A-F1
	16	110V15W	D11001506A-F1
	17	220V15W	D22001506A-F1
G14/BA9S	18	12V6W	D01200604-F1
	19	24V6W	D02400604-F1
T10/E10	22	110V3W	D11000307-F1
	23	110V5W	D11000507-F1
	24	220V3W	D22000307-F1
	27	12V0.11A	D012/1107-F1
RP35/BA15D	28	24V0.11A	D024/1107-F1
	36	120V40W	D12004024-F1
	37	220V30W	D22003024-F1

Model	Bulb No.	Wattage	Part No.
S25/BA15S	42	12V23W	D01202305-F1
	43	24V25W	D02402505-F1
T10/BA15S	44	12V55W	D01205515-02-F1
	45	24V70W	D02407015-02-F1
G18/BA15S	46	140V10W	D14001006-F1
	54	12V15W	D01201503-F1
	55	24V20W	D02402003-F1

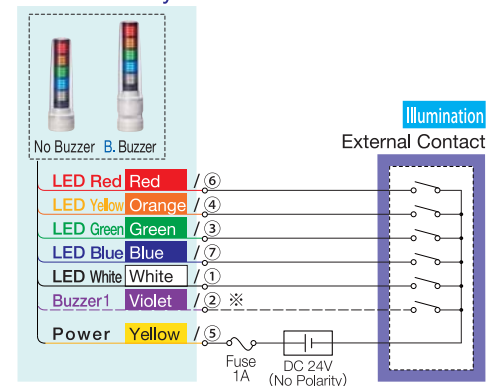
LS7 Wiring Diagram

[LS7 Model]

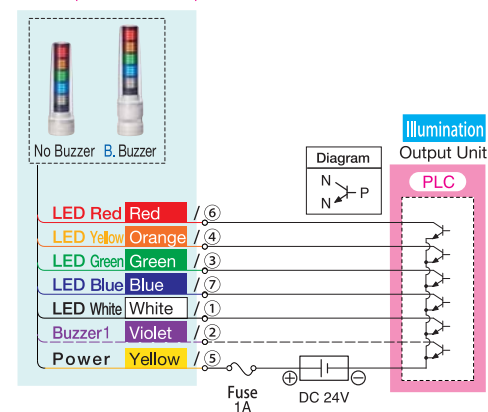
Model:LS7-502□(B)W□

■ Illumination No Buzzer/B. Buzzer

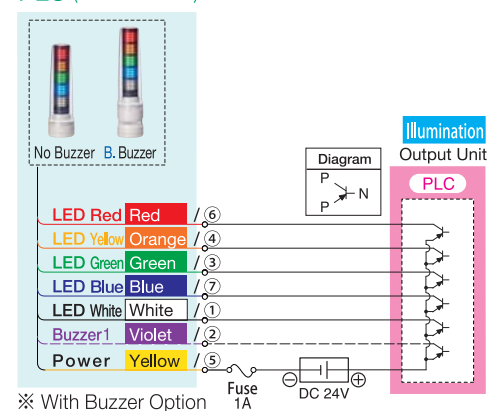
Contact Relay



PLC (NPN Transistor)

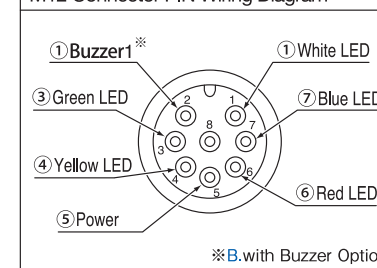


PLC (PNP Transistor)



※ With Buzzer Option

M12 Connector PIN Wiring Diagram

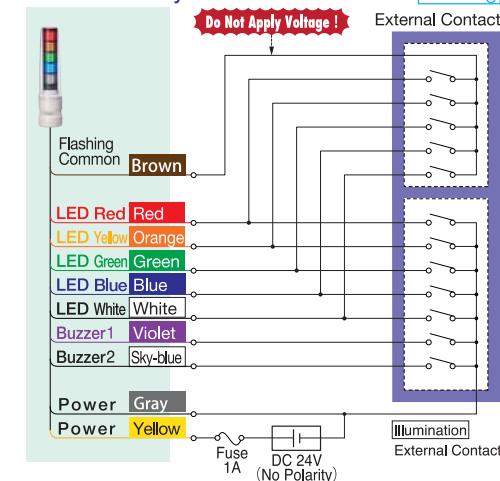


※B.with Buzzer Option

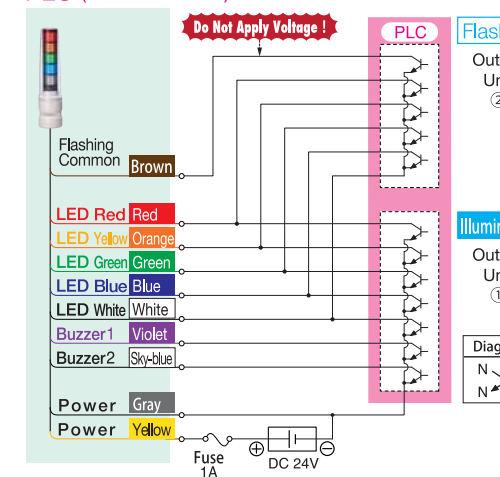
Model:LS7-502□FBWH

■ F.Illumination · Flashing B. Buzzer

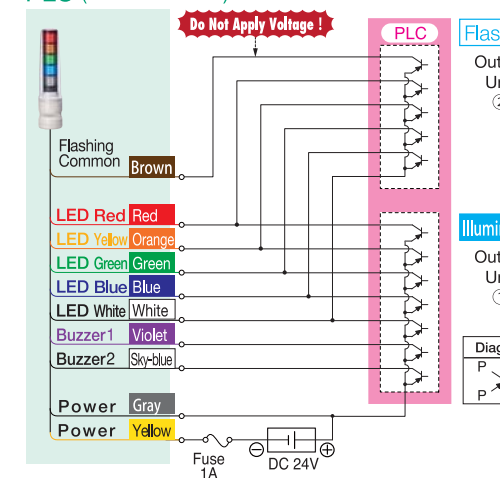
Contact Relay



PLC (NPN Transistor)



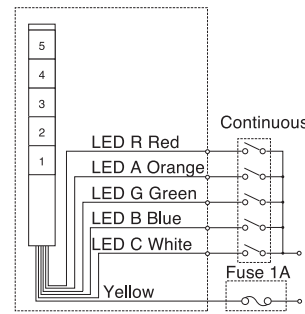
PLC (PNP Transistor)



(Note) When connecting the PLC outputs for illumination and flashing functions, the wiring (Common Wires) has to be separate between the flashing and non-flashing circuits.

ME/MES/MP/MPS/STD Wiring Diagram

[ME/MES/MP/MPS Model]



ME/MES/MP/MPS Signal line voltage and current per LED module

Rated Voltage	Signal Line Voltage	ME-A/MES-A Signal Line Current	MP/MPS Signal Line Current	Color of LED unit	Color of Lead wire
24V DC	24V DC	R, Y: 25mA G, B, C: 20mA	R, Y: 30mA G, B, C: 25mA	Red	Red
24V AC (MP/MPS only)	24V AC (MP/MPS only)	-	-	Amber	Orange
				Green	Green
				Blue	Blue
				Clear	White

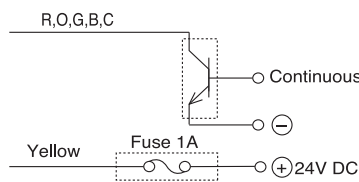
※ MP/MPS has no polarity.
(ME/MES: positive(+) on yellow)



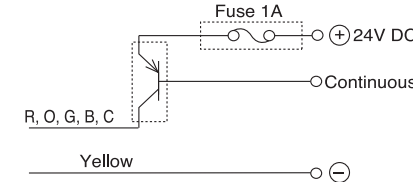
ME/MES MP/MPS

DC 24V: NPN(PNP) Transistor

(NPN Transistor)



(PNP Transistor)※MP/MPS only



Transistor Capacity

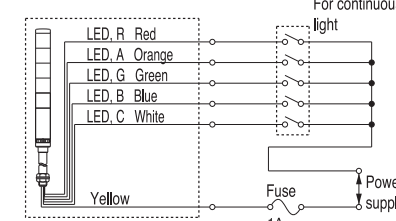
Model	ME/MES	MP/MPS
	Transistor (NPN)	Transistor (NPN/PNP)
Current Capacity	$I_c \geq 0.1A$	$I_c \geq 50mA$
Withstanding Voltage	$V_c \geq 35V$	$V_c \geq 35V$
Current Leakage	$I_l < 0.1mA$	$I_l < 0.1mA$

LCE/LCS Wiring Diagram

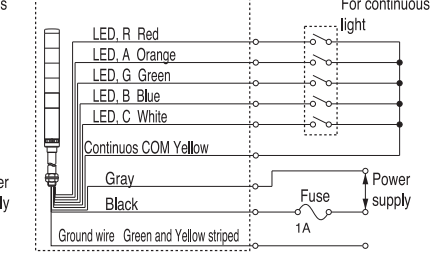
(LCE/LCS-□□□(FB)(W)(K) Model)

LCE/LCS [Continuous only]

24V AC/DC

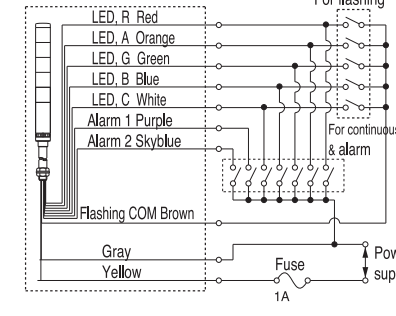


90~250V AC

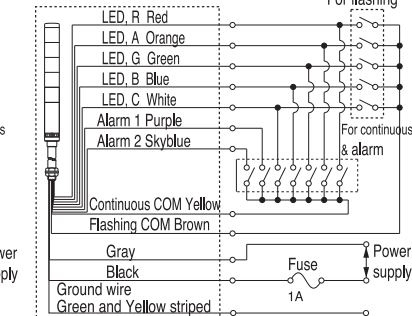


LCE [Continuous and Flashing with Alarm]

24V AC/DC



90~250V AC



LCS LCE

Lead wire color correspondence table

Color of LED unit	Color of Lead wire
Red	Red
Amber	Orange
Green	Green
Blue	Blue
Clear	White

Alarm	Color of Lead wire
Alarm 1	Purple
Alarm 2	Skyblue

Fuse for outer contact protection

Voltage	Fuse
All voltage types	1A

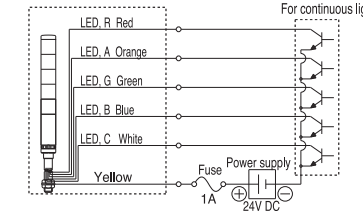
Signal line voltage and current per LED module

Model	Rated Voltage	Signal Line Voltage	LED		Alarm	
			Signal Line Current	Signal Line Current	Inrush Current	Inrush Current
LCE/LCS	24V AC/DC	AC/DC 24V	30mA	25mA	40mA	250mA
LCE-M2	90~250V AC	24V DC	30mA	25mA	40mA	250mA

NPN(PNP) Transistor

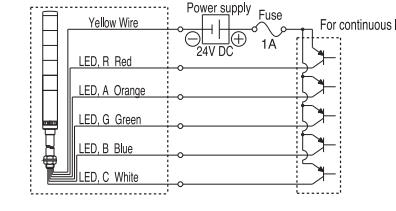
24V DC NPN Transistor

Continuous only



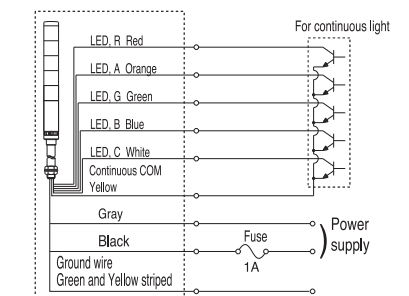
24V DC PNP Transistor

Continuous only

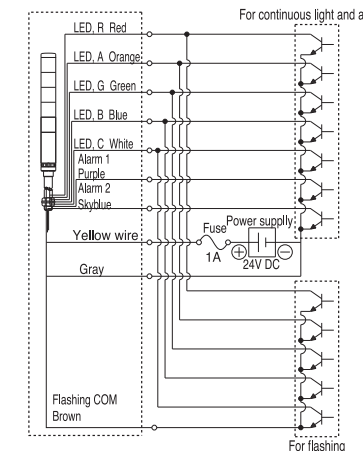


90~250V AC NPN Transistor

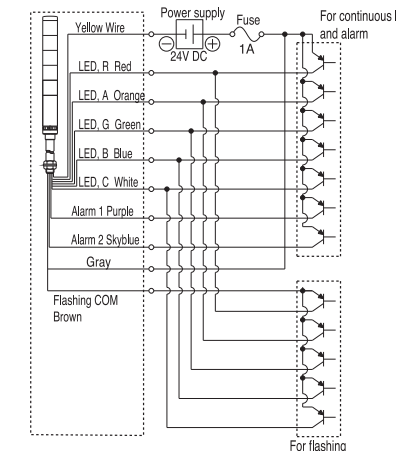
Continuous only



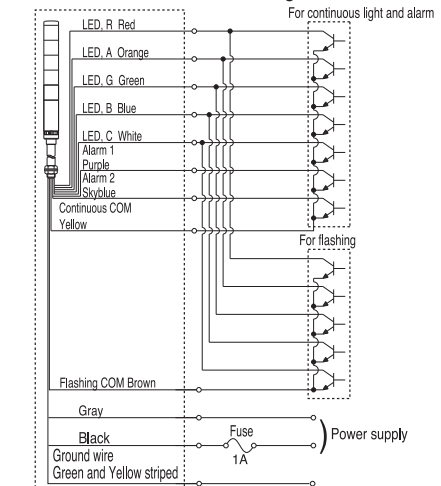
Continuous and Flashing with Alarm



Continuous and Flashing with Alarm



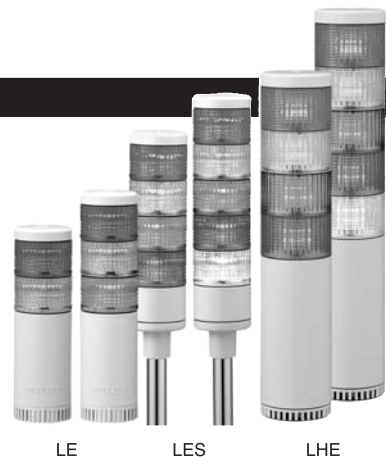
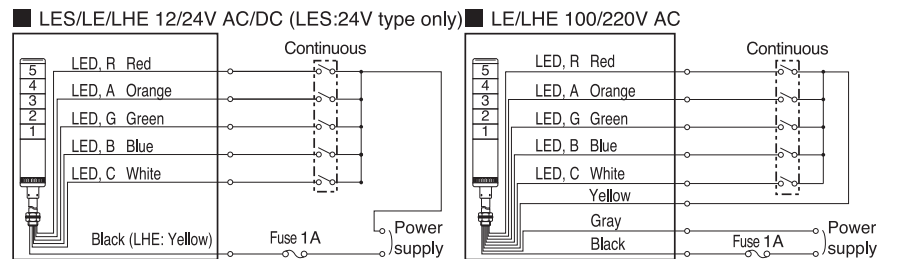
Continuous and Flashing with Alarm



Model	Transistor (NPN or PNP)	Withstanding Voltage	$V_c \geq 35V$
Current Capacity	$I_c \geq 100mA$ (LED UNIT) $I_c \geq 300mA$ (Alarm)	Current Leakage	$I_l \leq 1mA$

LES/LE/LHE Wiring Diagram

(LE-□□□(FB)(W)(P) Model)



LE LES LHE

Lead wire color correspondence table

Color of LED unit	Color of Lead wire
Red	Red
Amber	Orange
Green	Green
Blue	Blue
Clear	White

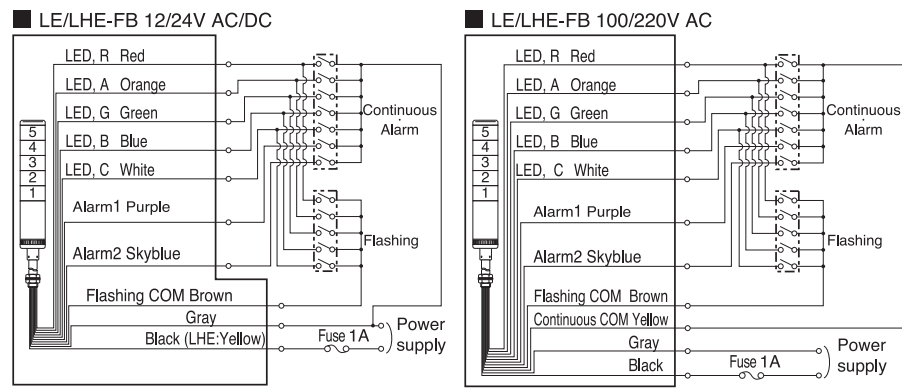
※LE type: All 5 light wires are supplied even if all colors are not used.

Alarm	Color of Lead wire
Alarm 1	Purple
Alarm 2	Skyblue

※Alarm wires do not exist for continuous only model.

Fuse for outer contact protection

Voltage	Fuse
All voltage types	1A

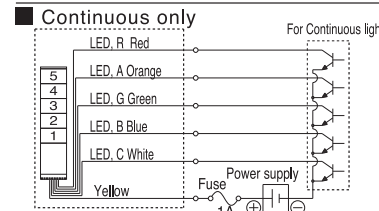


Signal line voltage and current per LED module

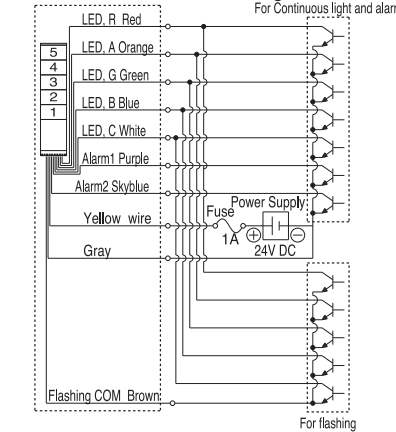
Model	Rated Voltage	Signal Line Voltage	LED			Alarm
			Signal Line Current			
LE	12V AC/DC	12V AC/DC	R, A: 50mA	G, C: 40mA	B: 44mA	Signal Line Current 40mA
LHE-A LES/LE	24V AC/DC	24V AC/DC	R, A: 50mA	G, C, B: 40mA		
LHE-A LE	100V, 220V AC	24V DC	R, A: 50mA	G, C, B: 40mA		Rush Current 150mA

NPN(PNP) Transistor

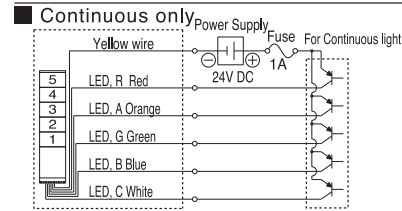
24V DC NPN Transistor



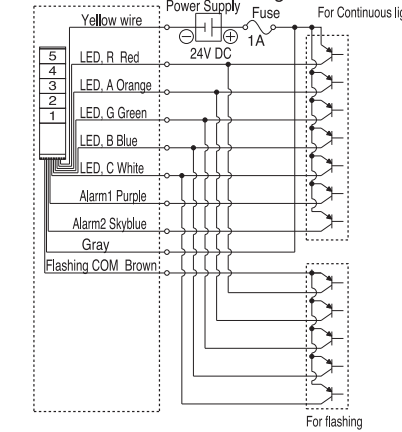
Continuous and Flashing with Alarm



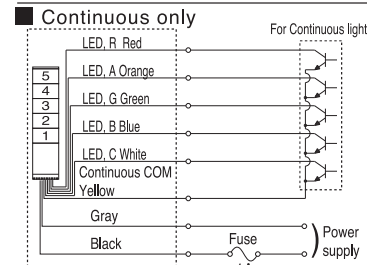
24V DC PNP Transistor



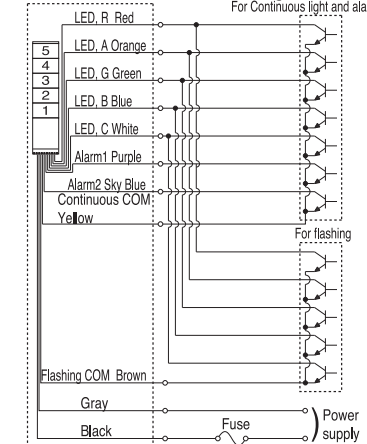
Continuous and Flashing with Alarm



100/220V AC NPN Transistor



Continuous and Flashing with Alarm

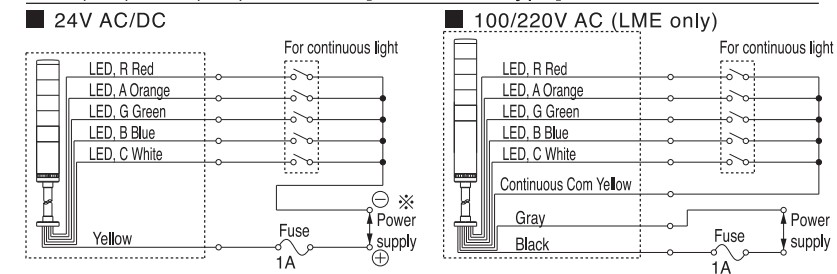


	Transistor	Current Capacity	Withstanding Voltage	Current Leakage
LES	NPN or PNP	$I_c \geq 100\text{mA}$ (LED UNIT)	$V_c \geq 35\text{V}$	$I_L \leq 1\text{mA}$
LE		$I_c \geq 300\text{mA}$ (Alarm)	$V_c \geq 50\text{V}$	
LHE		$I_c \geq 50\text{mA}$ (LED UNIT)		

LME/LMS Wiring Diagram

[LME/LMS-□□□(FB)(W)(L)(K) Model]

LME(-W)/LMS(-W)-S-Q/LMS [Continuous type]



LME LMS

Lead wire color correspondence table

Color of LED unit	Color of Lead wire
Red	Red
Amber	Orange
Green	Green
Blue	Blue
Clear	White

LME-S/Q

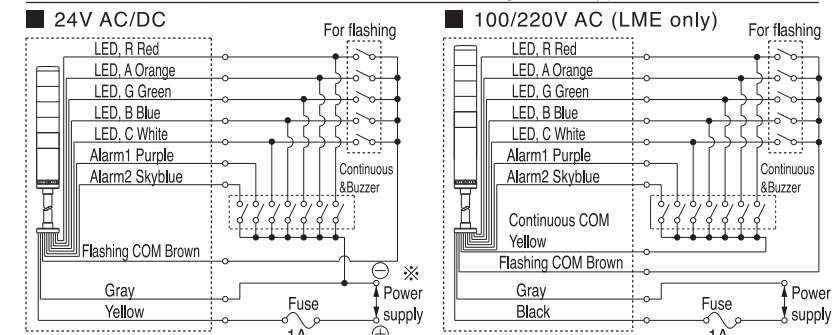
	Color of LED unit	Color of Lead wire
S1	Red-Amber-Green	Red-Orange-Green
S4	Red-Green-Blue	Red-Green-Blue
S7	Amber-Green-Blue	Orange-Green-Blue
Q1	Red-Amber-Green-Blue	Red-Orange-Green-Blue
Q2	Red-Amber-Green-Clear	Red-Orange-Green-White
Q4	Amber-Green-Blue-Clear	Orange-Green-Blue-White

Alarm	Color of Lead wire
Alarm 1	Purple
Alarm 2	Skyblue

Fuse for outer contact protection

Voltage	Fuse
All voltage types	1A

LME-FB(W)/LME(-W)-S-Q [Continuous/Flashing/Alarm type]



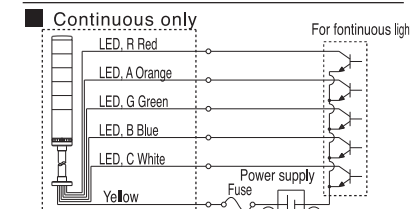
※LME-FB-S/Q Series: 24V model is DC only, with only one polarity: positive (+) on Yellow (NPN)

Signal line voltage and current per LED module

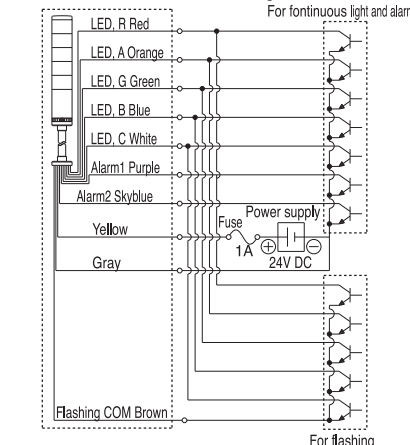
Model	Rated Voltage	Signal Line Voltage	LED		Buzzer	
			Signal Line Current	Signal Line Current	Inrush Current	
LME	24V AC/DC	24V AC/DC	50mA	20mA	40mA	250mA
	100V AC	24V DC				
	220V AC					
LME-S	24V DC	24V DC	50mA	40mA	40mA	250mA
	100V AC					
	220V AC					

NPN(PNP) Transistor

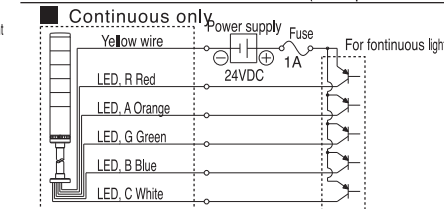
24V DC NPN Transistor



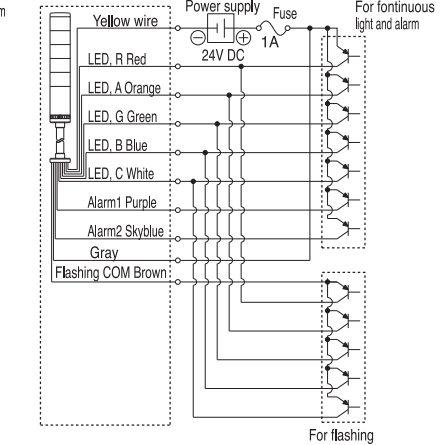
Continuous and Flashing with Alarm



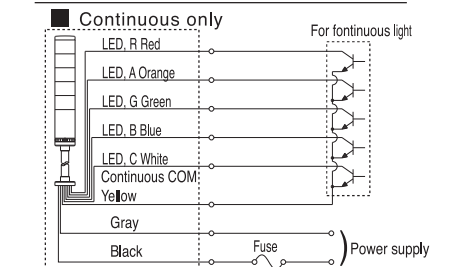
DC24V PNP Transistor(except for S/Q type)



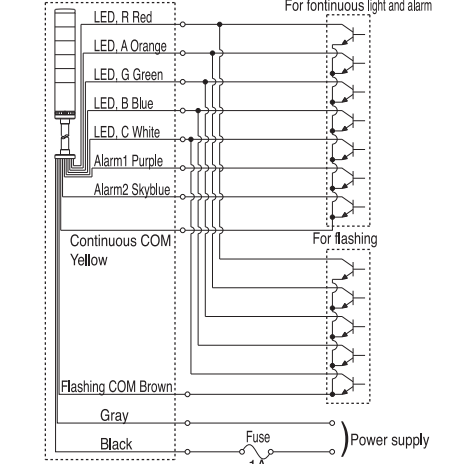
Continuous and Flashing with Alarm



AC100/220V NPN Transistor



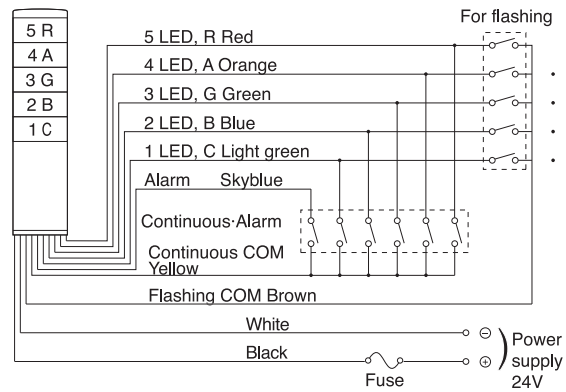
Continuous and Flashing with Alarm



Model	Transistor (NPN or PNP)	Voltage
Current Capacity	$I_c \geq 100\text{mA}$ (LED UNIT) $I_c \geq 300\text{mA}$ (Buzzer)	$V_c \geq 35\text{V}$
Leakage		$I_L \leq 1\text{mA}$

LGE Wiring Diagram

[LGE-□□□(FB) Model]



LGE

Signal line voltage and current per LED module

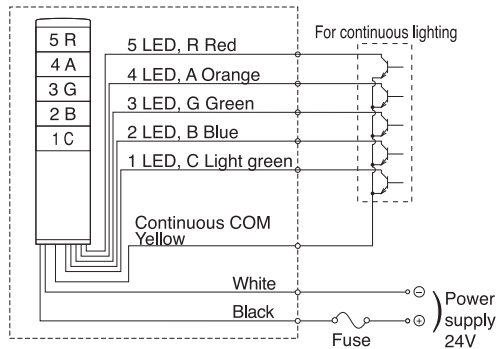
Rated Voltage	Signal Line Voltage	LGE		
		LED Signal Line Current	Alarm Signal Line Current	Inrush Current
24V AC/DC	24V AC/DC	90mA	20mA	250mA
100V AC	24V AC			
220V AC	24V AC			

Continuous signal has priority when Continuous signal and Flashing signal are activated simultaneously.

DC 24V: NPN(PNP) Transistor

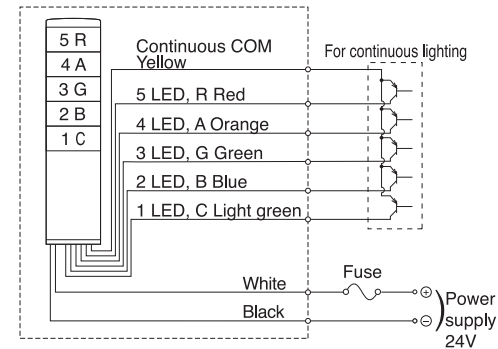
NPN

LGE

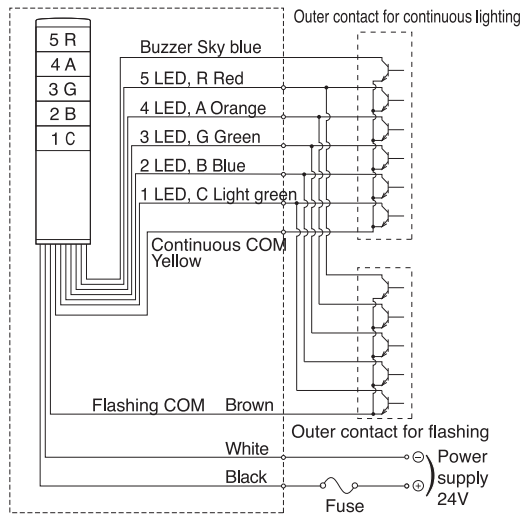


PNP

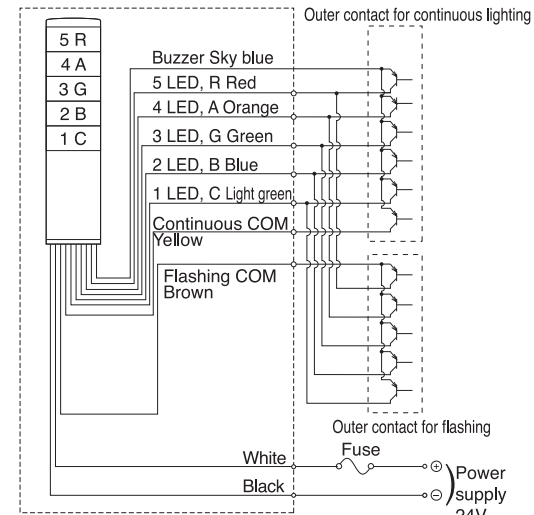
LGE



LGE-FB



LGE-FB



Fuse rate

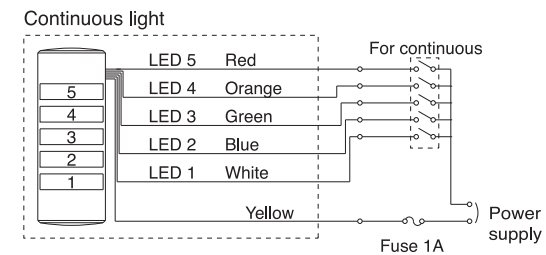
Model	LGE
Voltage Type	All types
Fuse	Miniature glass tube fuse ø5×20mm
Rated Current	1A

Transistor Capacity (NPN/PNP)

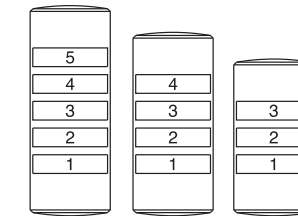
Model	LGE
Current Capacity	Ic ≥ 0.1A (LED unit) Ic ≥ 0.3A (Alarm)
Voltage	Vc ≥ 35V

WEP Wiring Diagram

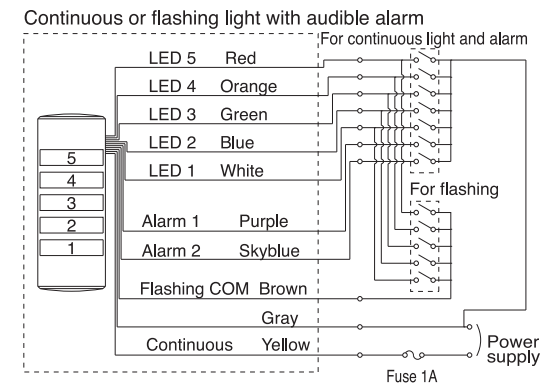
[WEP-□□□(FB) Model]



Wire color



WEP/WE



Light

Wire color	5 Lights	4 Lights	3 Lights
Red	5	4	3
Orange	4	3	2
Green	3	2	1
Blue	2	1	-
White	1	-	-

Alarm

	Wire color	Sound
Alarm 1	Purple	Short pips
Alarm 2	Skyblue	Long beeps

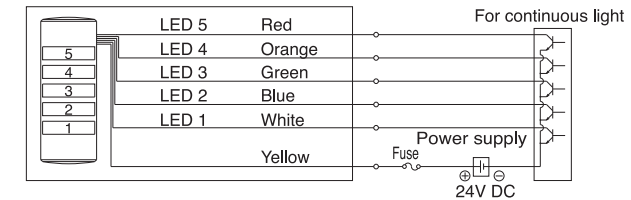
Signal line voltage and current per LED module

Model	Rated Voltage	Signal Line Voltage	LED		Alarm	
			Signal Line Current R,A	G,B,C	Signal Line Current	Inrush Current
WEP	24V AC/DC	24V AC/DC	30mA	25mA	40mA	250mA

24V DC NPN(PNP) Transistor

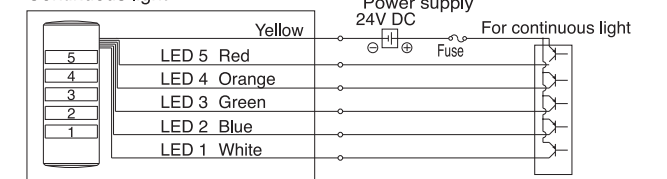
NPN Transistor

Continuous light

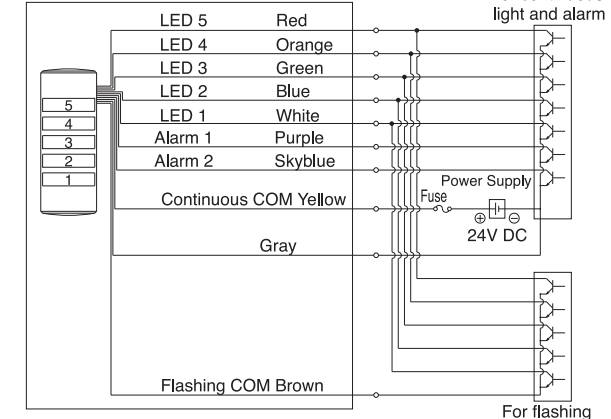


PNP Transistor

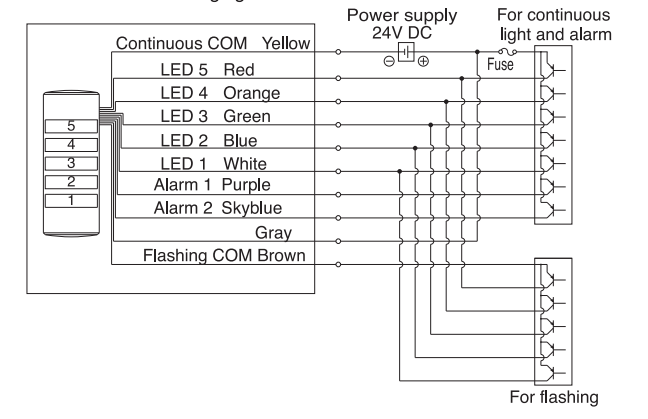
Continuous light



Continuous or flashing light with audible alarm



Continuous or flashing light with audible alarm



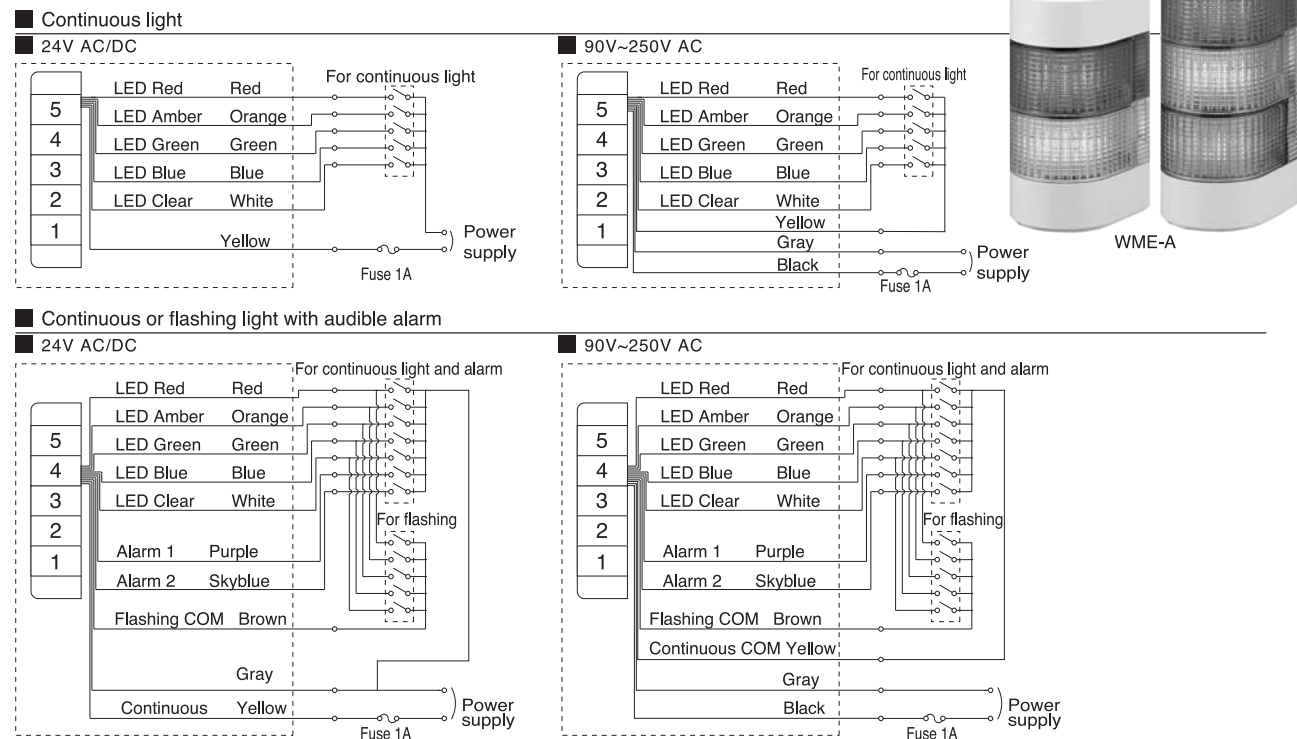
Type	Transistor (NPN or PNP)	Voltage	Vc ≥ 35V
Current Capacity	Ic ≥ 0.1A Buzzer 300mA	Current Leakage	Il ≤ 0.1A

[Fuse Rating]

1A

WME-A Wiring Diagram

[WME-A-□□□(FB) Model]

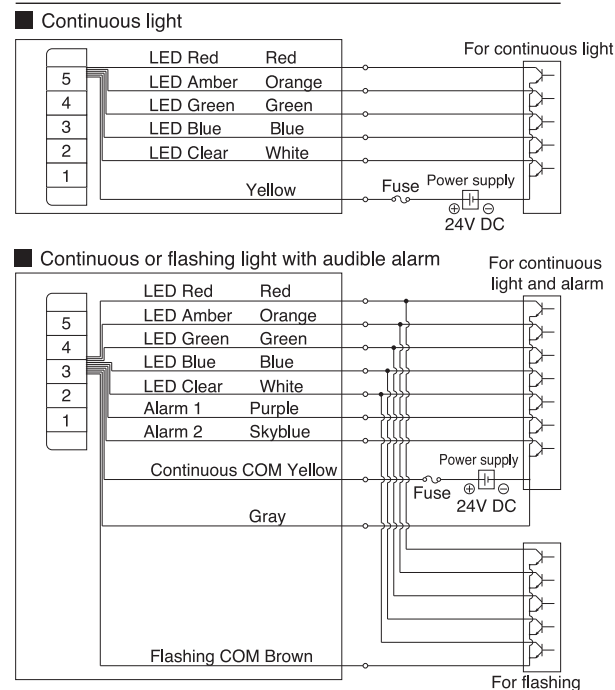


Signal line voltage and current per LED module

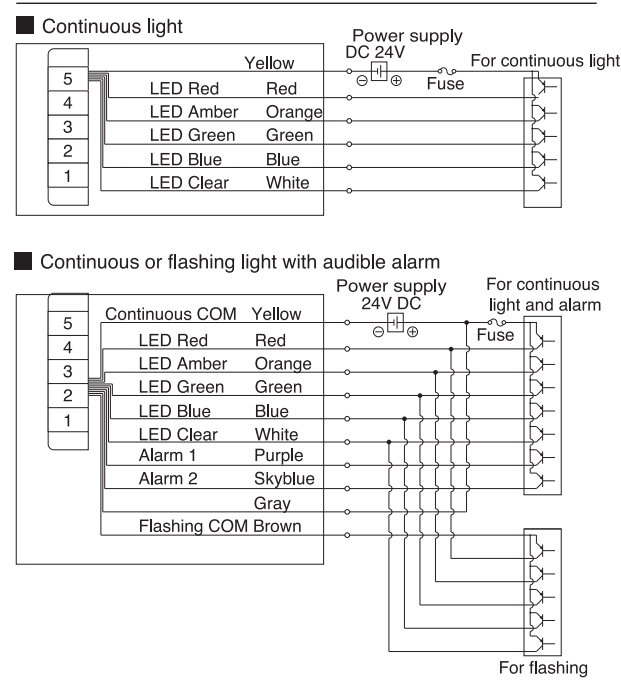
Model	Rated Voltage	Signal Line Voltage	LED					Alarm		
			R	A	G	B	C	Signal Line Current	Inrush Current	
WME-A	24V AC/DC	24V AC/DC	35mA					50mA	40mA	250mA
	90V~250V AC	24V DC	35mA					50mA	40mA	250mA

24V DC NPN(PNP) Transistor

NPN Transistor



PNP Transistor



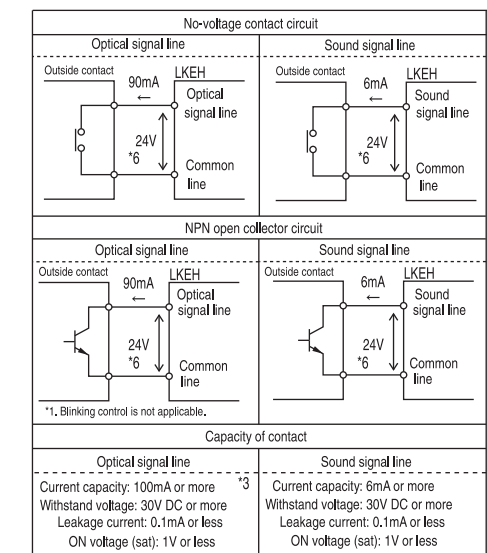
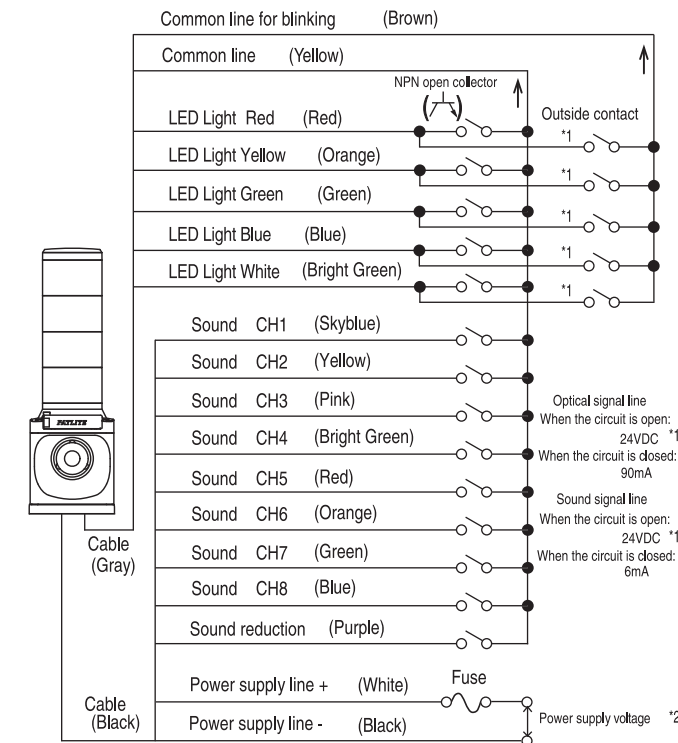
Type	Transistor (NPN or PNP)	Voltage	V _c ≥ 35V (48V: V _c ≥ 63V)
Current Capacity	I _c ≥ 0.1A Buzzer 300mA	Current Leakage	I _L ≤ 0.1A

[Fuse Rating]

1A

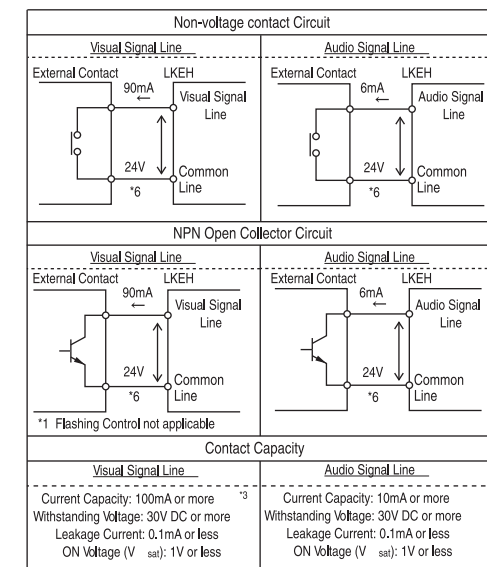
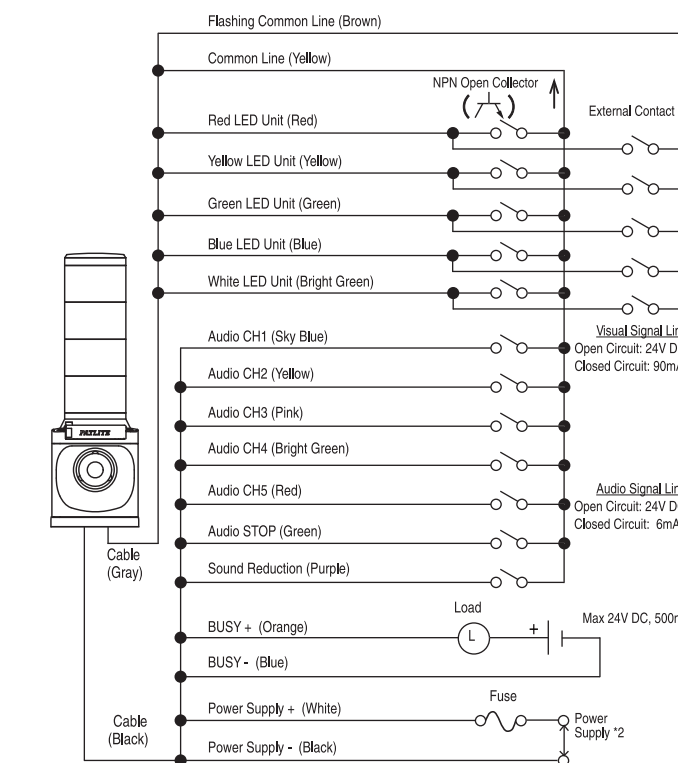
LKEH-F□/ LKEH-FV Wiring Diagram

[LKEH-F□ Model]



Model	Rated Voltage	Inrush Current ^{*4}	Fuse Capacity ^{*5}
LKEH-□02	24V DC	10A	2A(Normal)
LKEH-□10	100V AC	12A	0.5A(Time lag)
LKEH-□12	120V AC	12A	0.5A(Time lag)
LKEH-□20	220V AC	6A	0.5A(Normal)

[LKEH-FV Model]



Model	Rated Voltage	Inrush Current ^{*4}	Fuse Capacity ^{*5}
LKEH-□02	24V DC	10A	2.0A(Fast)
LKEH-□10	100V AC	12A	0.5A(Delay)
LKEH-□12	120V AC	12A	0.5A(Delay)
LKEH-□20	220V AC	6A	0.5A(Fast)

※ Do not supply power to the signal lines. Failure to comply will damage the product.

*1. Flashing control is only for non-voltage contact circuit applications.
 *2. For the LKEH-□02(P), connect the Power Supply (Black) to the negative terminal. For the LKEH-□0202UL (UL Standard), connect to a Class 2 power supply.
 *3. Rated contact capacity per LED light unit. When using more than one LED light unit of the same color, refer to the LKEH Manual for proper current calculations.
 *4. Rated at maximum operating voltage when power is first switched on.
 *5. For the LKEH-□10/12, use a slow-blow fuse. If a fast-blow type is used, there is a risk of blowing the fuse from the inrush current.
 *6. Indicates the supply voltage of the LKEH-□02(P).

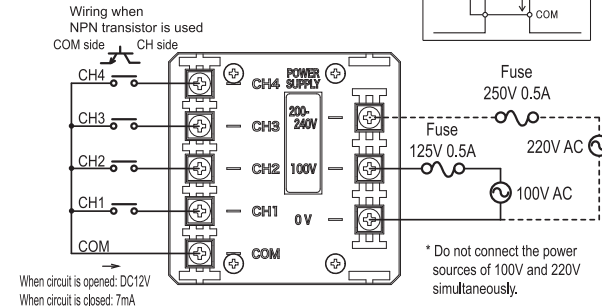
BD/BK BDV/BKV Wiring Diagram

[BD Model]

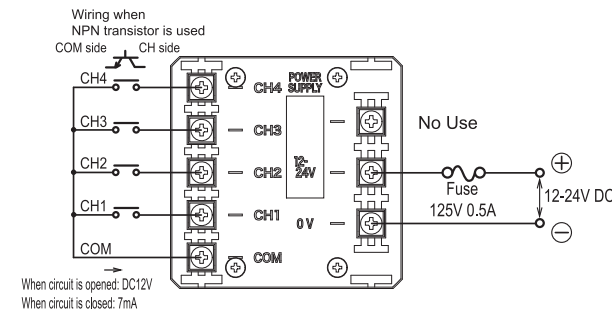
●Contact Capacity		●Inrush current	
Withstanding voltage	DC12V or higher	BD-24	5.5A/6ms at maximum
Current capacity	7mA or higher	BD-100	None
Leakage current	0.1mA or lower		
ON voltage (Vsat)	1V or lower (0.5V or lower in case of DC12V)		

Wiring Examples

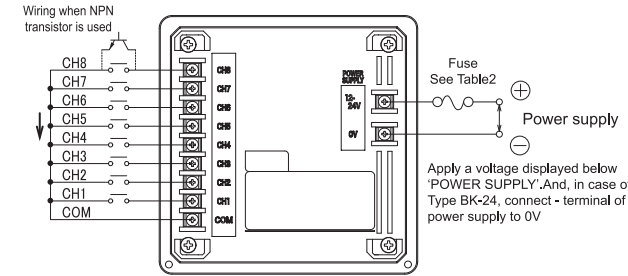
●BD-100



●BD-24



[BK Model]



Do not apply voltage to the signal lines.
Failure to do so may damage the product.

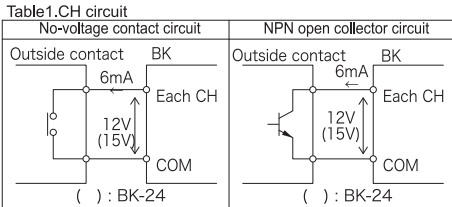
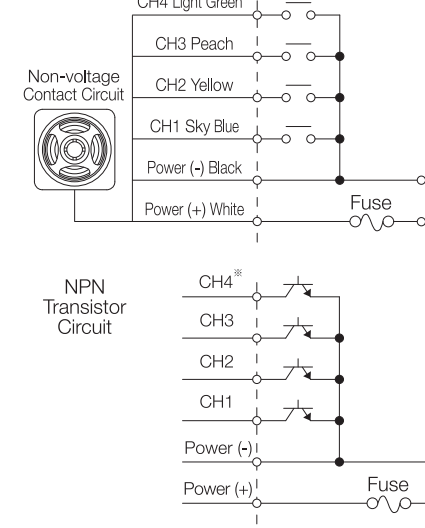


Table2.Inrush current and Fuse		Table3.Contact capacity of CH	
Model	Inrush current	Fuse	Current Capacity
BK-24	Max 20A/ 5ms	125V 1A	10mA or higher
BK-100	None	125V 0.5A	Withstanding Voltage
BK-220	None	250V 0.5A	DC20V or higher
			Leakage Current
			0.1mA or lower
			ON Voltage(Vsat)
			1V or lower

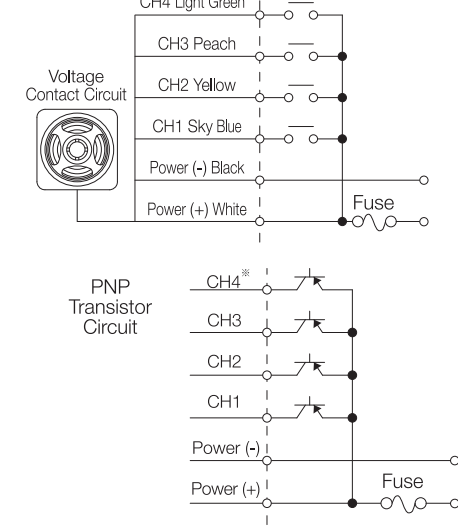
BSV/WG Wiring Diagram

[BSV Model]

●BSV-24N NPN

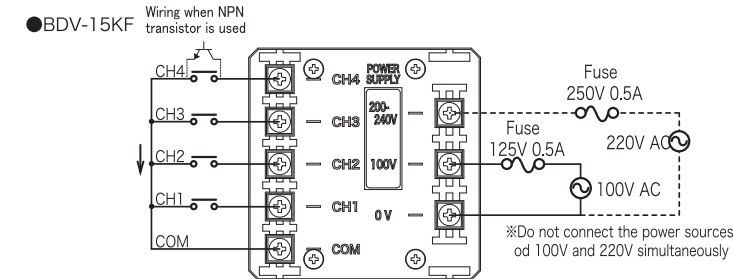


■BSV-24P PNP



※ The Sound Reduction Function is used on CH4 (Light Green Wire).
When in use, playback messages can only be used for three Bit Input or seven Binary Input channels.

[BDV Model]



●BDV-15JF

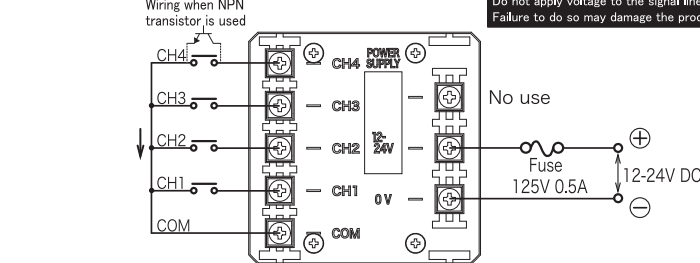


Chart1.Specifications of Signal Line

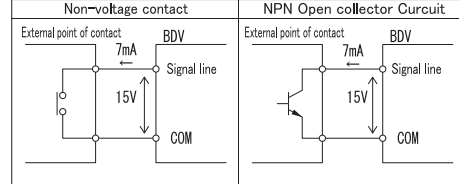


Chart2. Contact Capacity	
Current Capacity	10mA or more
Withstanding Voltage	20V DC or more
Leakage Current	0.1mA or less
ON Voltage(Vsat)	1V or less

[BKV Model]

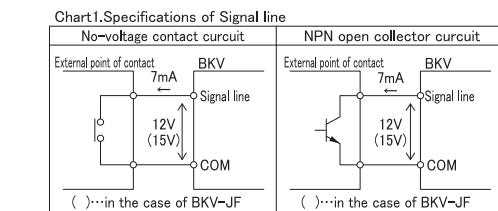
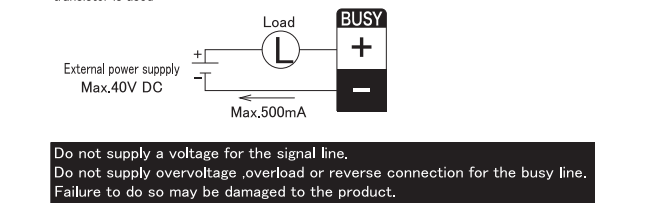
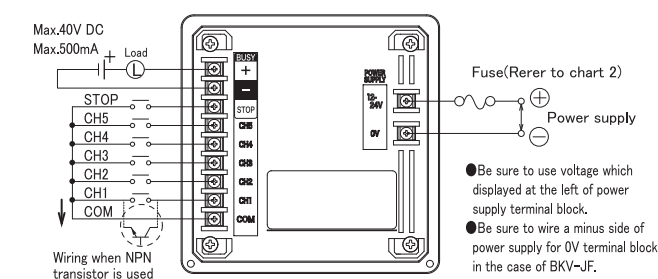
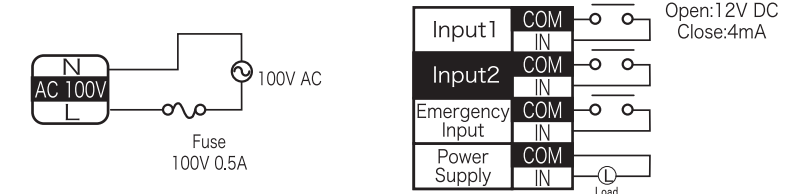


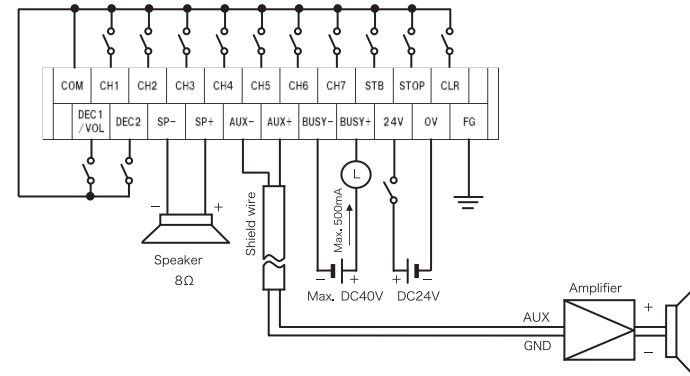
Chart2. Inrush current* Fuse		Chart3. Contact Capacity	
Model	Inrush current	Fuse	Current capacity
BKV-JF	Max.10A / 5ms	125V 1A	10mA or more
BKV-KF	Max.1.5A / 12ms	125V 0.5A	Withstanding Voltage
BKV-QF	Max.1.2A/0.5ms	250V 0.5A	20V DC or more
			Leakage current
			0.1mA or less
			ON voltage(Vsat)
			1V or less

[WG Model]

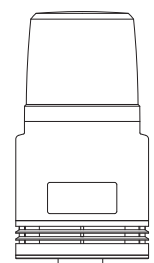


FV/RFT/RFV Wiring Diagram

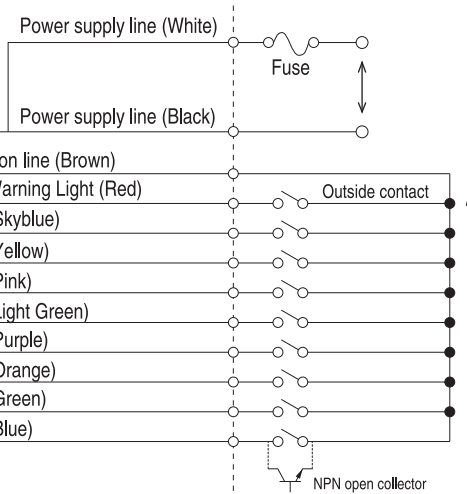
[FV-127JP Model]



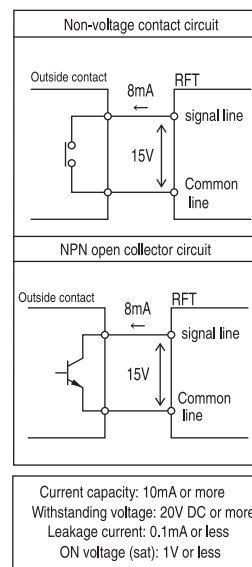
RFT Model]



Model	Inrush Current	Fuse
RFT-24	Max. 10A / 5ms	125V 1A
RFT-100	-	125V 1A
RFT-220	-	250V 1A



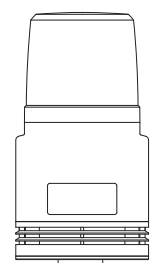
Power supply



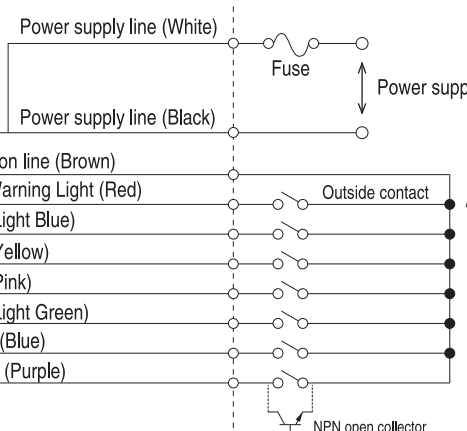
Current capacity: 10mA or more
Withstanding voltage: 20V DC or more
Leakage current: 0.1mA or less
ON voltage (sat): 1V or less

Do not apply voltage to the signal lines.
Failure to do so may damage the product.

RFV Model]

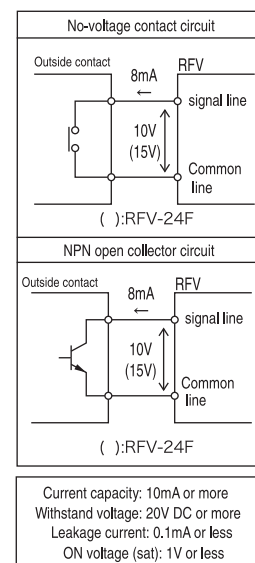


Model	Inrush Current	Fuse
RFT-24	Max. 10A / 5ms	125V 1A
RFT-100	-	125V 1A
RFT-220	-	250V 1A



RFV-24F
Open: 15V DC
Close: 6mA

RFV-100/220F
Open: 10V DC
Close: 6mA



Current capacity: 10mA or more
Withstand voltage: 20V DC or more
Leakage current: 0.1mA or less
ON voltage (sat): 1V or less

Do not apply voltage to the signal lines.
Failure to do so may damage the product.

UL Certification Model Comparison Table

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ME-102A	ME_02A	LCE-2M2AFBW	LCE_M2AFBW	LE-302FBW	LE_02FBW	LME-312	LME_12	LME-202U	LME_02U	LE-412FBW	LE_12FBW	LME-412	LME_12	LME-302U	LME_02U	LE-512FBW	LE_12FBW	LME-412U	LME_12U	LME-402U	LME_02U	LE-123	LEL_23	LME-512	LME_12	LME-502U	LME_02U	LE-123P	LEL_23P	LME-112L	LME_12L	LME-102UL	LME_02UL	LE-223	LEL_23	LME-212L	LME_12L	LME-202UL	LME_02UL	LE-323	LEL_23	LME-312L	LME_12L	LME-302UL	LME_02UL	LE-423	LEL_23	LME-412L	LME_12L	LME-402UL	LME_02UL	LE-523	LEL_23	LME-512L	LME_12L	LME-502UL	LME_02UL	LE-123P	LEL_23P	LME-112W	LME_12W	LME-102UL	LME_02UL	LE-223P	LEL_23P	LME-212W	LME_12W	LME-102UW	LME_02UW	LE-323P	LEL_23P	LME-312W	LME_12W	LME-202UW	LME_02UW	LE-423P	LEL_23P	LME-412W	LME_12W	LME-302UW	LME_02UW	LE-523P	LEL_23P	LME-512W	LME_12W	LME-402UW	LME_02UW	LE-123W	LEL_23W	LME-112FB	LME_12FB	LME-502UW	LME_02UW	LE-223W	LEL_23W	LME-212FB	LME_12FB	LME-102UFB	LME_02UFB	LE-323W	LEL_23W	LME-312FB	LME_12FB	LME-202UFB	LME_02UFB	LE-423W	LEL_23W	LME-412FB	LME_12FB	LME-302UFB	LME_02UFB	LE-523W	LEL_23W	LME-512FB	LME_12FB	LME-402UFB	LME_02UFB	LE-123FB	LEL_23FB	LME-112FBL	LME_12FBL	LME-502UFB	LME_02UFB	LE-223FB	LEL_23FB	LME-212FBL	LME_12FBL	LME-102UFB	LME_02UFB	LE-323FB	LEL_23FB	LME-312FBL	LME_12FBL	LME-202UFB	LME_02UFB	LE-423FB	LEL_23FB	LME-412FBL	LME_12FBL	LME-302UFB	LME_02UFB	LE-523FB	LEL_23FB	LME-512FBL	LME_12FBL	LME-402UFB	LME_02UFB	LE-123FBW	LEL_23FBW	LME-123FBP	LEL_23FBP	LME-512FBW	LME_12FBW	LME-102UFB	LME_02UFB	LE-223FBW	LEL_23FBW	LME-223FBP	LEL_23FBP	LME-212FBW	LME_12FBW	LME-202UFB	LME_02UFB	LE-323FBW	LEL_23FBW	LME-323FBP	LEL_23FBP	LME-312FBW	LME_12FBW	LME-302UFB	LME_02UFB	LE-423FBW	LEL_23FBW	LME-423FBP	LEL_23FBP	LME-412FBW	LME_12FBW	LME-402UFB	LME_02UFB	LE-523FBW	LEL_23FBW	LME-523FBP	LEL_23FBP	LME-512FBW	LME_12FBW	LME-502UFB	LME_02UFB	LME-102	LME_02	LME-123	LME_23	LME-112U	LME_12U	LME-202	LME_02	LME-223	LME_23	LME-212U	LME_12U	LME-302	LME_02	LME-323	LME_23	LME-312U	LME_12U	LME-402	LME_02	LME-423	LME_23	LME-412U	LME_12U	LME-502	LME_02	LME-523	LME_23	LME-512U	LME_12U	LME-102L	LME_02L	LME-123L	LME_23L	LME-112UL	LME_12UL	LME-202L	LME_02L	LME-223L	LME_23L	LME-212UL	LME_12UL	LME-302L	LME_02L	LME-323L	LME_23L	LME-312UL	LME_12UL	LME-402L	LME_02L	LME-423L	LME_23L	LME-412UL	LME_12UL	LME-502L	LME_02L	LME-523L	LME_23L	LME-512UL	LME_12UL	LME-102W	LME_02W	LME-123W	LME_23W	LME-112UW	LME_12UW	LME-202W	LME_02W	LME-223W	LME_23W	LME-212UW	LME_12UW	LME-302W	LME_02W	LME-323W	LME_23W	LME-312UW	LME_12UW	LME-402W	LME_02W	LME-423W	LME_23W	LME-412UW	LME_12UW	LME-502W	LME_02W	LME-523W	LME_23W	LME-512UW	LME_12UW	LME-102FB	LME_02FB	LME-123FB	LME_23FB	LME-112UFB	LME_12UFB	LME-202FB	LME_02FB	LME-223FB	LME_23FB	LME-212UFB	LME_12UFB	LME-302FB	LME_02FB	LME-323FB	LME_23FB	LME-312UFB	LME_12UFB	LME-402FB	LME_02FB	LME-423FB	LME_23FB	LME-412UFB	LME_12UFB	LME-502FB	LME_02FB	LME-523FB	LME_23FB	LME-512UFB	LME_12UFB	LME-102FBL	LME_02FBL	LME-123FBL	LME_23FBL	LME-112UFB	LME_12UFB	LME-202FBL	LME_02FBL	LME-223FBL	LME_23FBL	LME-212UFB	LME_12UFB	LME-302FBL	LME_02FBL	LME-323FBL	LME_23FBL	LME-312UFB	LME_12UFB	LME-402FBL	LME_02FBL	LME-423FBL	LME_23FBL	LME-412UFB	LME_12UFB	LME-502FBL	LME_02FBL	LME-523FBL	LME_23FBL	LME-512UFB	LME_12UFB	LME-102FBK	LME_02FBK	LME-123FBK	LME_23FBK	LME-112UFBK	LME_12UFBK	LME-202FBK	LME_02FBK	LME-223FBK	LME_23FBK	LME-212UFBK	LME_12UFBK	LME-302FBK	LME_02FBK	LME-323FBK	LME_23FBK	LME-312UFBK	LME_12UFBK	LME-402FBK	LME_02FBK	LME-423FBK	LME_23FBK	LME-412UFBK	LME_12UFBK	LME-502FBK	LME_02FBK	LME-523FBK	LME_23FBK	LME-512UFBK	LME_12UFBK	LME-102FBW	LME_02FBW	LME-123FBW	LME_23FBW	LME-112UFBW	LME_12UFBW	LME-202FBW	LME_02FBW	LME-223FBW	LME_23FBW	LME-212UFBW	LME_12UFBW	LME-302FBW	LME_02FBW	LME-323FBW	LME_23FBW	LME-312UFBW	LME_12UFBW	LME-402FBW	LME_02FBW	LME-423FBW	LME_23FBW	LME-412UFBW	LME_12UFBW	LME-502FBW	LME_02FBW	LME-523FBW	LME_23FBW	LME-512UFBW	LME_12UFBW	LME-112	LME_12	LME-123FBW	LME_23FBW	LME-112UFBW	LME_12UFBW	LME-202FBW	LME_02FBW	LME-223FBW	LME_23FBW	LME-212UFBW	LME_12UFBW	LME-302FBW	LME_02FBW	LME-323FBW	LME_23FBW	LME-312UFBW	LME_12UFBW	LME-402FBW	LME_02FBW	LME-423FBW	LME_23FBW	LME-412UFBW	LME_12UFBW	LME-502FBW	LME_02FBW	LME-523FBW	LME_23FBW	LME-512UFBW	LME_12UFBW	LME-1212	LME_12	LME-123FBW	LME_23FBW	LME-112UFBW	LME_12UFBW	LME-202FBW	LME_02FBW	LME-223FBW	LME_23FBW	LME-212UFBW	LME_12UFBW	LME-302FBW	LME_02FBW	LME-323FBW	LME_23FBW	LME-312UFBW	LME_12UFBW	LME-402FBW	LME_02FBW	LME-423FBW	LME_23FBW	LME-412UFBW	LME_12UFBW	LME-502FBW	LME_02FBW	LME-523FBW	LME_23FBW	LME-512UFBW	LME_12UFBW

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LME-123U	LME_23U	LME-202NFBK	LME_02NFBK	LME-323NFB	LME_23NFB	LMS-102K	LMS_02K	LKEH-302FCUL	LKEH_02FCUL				
LME-223U	LME_23U	LME-302NFBK	LME_02NFBK	LME-423NFB	LME_23NFB	LMS-202K	LMS_02K	LKEH-402FCUL	LKEH_02FCUL				
LME-323U	LME_23U	LME-402NFBK	LME_02NFBK	LME-523NFB	LME_23NFB	LMS-302K	LMS_02K	LKEH-102FDUL	LKEH_02FDUL				
LME-423U	LME_23U	LME-502NFBK	LME_02NFBK	LME-123NFB	LME_23NFB	LMS-402K	LMS_02K	LKEH-202FDUL	LKEH_02FDUL				
LME-523U	LME_23U	LME-102NFBW	LME_02NFBW	LME-223NFB	LME_23NFB	LMS-502K	LMS_02K	LKEH-302FDUL	LKEH_02FDUL				
LME-123UL	LME_23UL	LME-202NFBW	LME_02NFBW	LME-123NFB	LME_23NFB	LHE-102A	LHE_02A	LKEH-402FDUL	LKEH_02FDUL				
LME-223UL	LME_23UL	LME-302NFBW	LME_02NFBW	LME-223NFB	LME_23NFB	LHE-202A	LHE_02A	LKEH-102FEUL	LKEH_02FEUL				
LME-323UL	LME_23UL	LME-402NFBW	LME_02NFBW	LME-423NFB	LME_23NFB	LHE-302A	LHE_02A	LKEH-202FEUL	LKEH_02FEUL				
LME-423UL	LME_23UL	LME-502NFBW	LME_02NFBW	LME-523NFB	LME_23NFB	LHE-402A	LHE_02A	LKEH-302FEUL	LKEH_02FEUL				
LME-523UL	LME_23UL	LME-112N	LME_12N	LME-123NFB	LME_23NFB	LHE-502A	LHE_02A	LKEH-402FEUL	LKEH_02FEUL				
LME-123UW	LME_23UW	LME-212N	LME_12N	LME-223NFB	LME_23NFB	LHE-102AFB	LHE_02AFB	LKEH-102FVUL	LKEH_02FVUL				
LME-223UW	LME_23UW	LME-312N	LME_12N	LME-423NFB	LME_23NFB	LHE-202AFB	LHE_02AFB	LKEH-202FVUL	LKEH_02FVUL				
LME-323UW	LME_23UW	LME-412N	LME_12N	LME-523NFB	LME_23NFB	LHE-302AFB	LHE_02AFB	LKEH-302FVUL	LKEH_02FVUL				
LME-423UW	LME_23UW	LME-512N	LME_12N	LME-123NFB	LME_23NFB	LHE-402AFB	LHE_02AFB	LKEH-402FVUL	LKEH_02FVUL				
LME-523UW	LME_23UW	LME-112NL	LME_12NL	LME-223NFB	LME_23NFB	LHE-502AFB	LHE_02AFB						
LME-123UFB	LME_23UFB	LME-212NL	LME_12NL	LME-423NFB	LME_23NFB	LHE-112A	LHE_12A						
LME-223UFB	LME_23UFB	LME-312NL	LME_12NL	LME-523NFB	LME_23NFB	LHE-212A	LHE_12A						
LME-323UFB	LME_23UFB	LME-412NL	LME_12NL	LME-123NFB	LME_23NFB	LHE-312A	LHE_12A						
LME-423UFB	LME_23UFB	LME-512NL	LME_12NL	LME-223NFB	LME_23NFB	LHE-412A	LHE_12A						
LME-523UFB	LME_23UFB	LME-112NW	LME_12NW	LME-423NFB	LME_23NFB	LHE-512A	LHE_12A						
LME-123UFB	LME_23UFB	LME-212NW	LME_12NW	LME-523NFB	LME_23NFB	LHE-112AFB	LHE_12AFB						
LME-223UFB	LME_23UFB	LME-312NW	LME_12NW	LME-123NFB	LME_23NFB	LHE-212AFB	LHE_12AFB						
LME-323UFB	LME_23UFB	LME-412NW	LME_12NW	LME-223NFB	LME_23NFB	LHE-312AFB	LHE_12AFB						
LME-423UFB	LME_23UFB	LME-512NW	LME_12NW	LME-423NFB	LME_23NFB	LHE-412AFB	LHE_12AFB						
LME-523UFB	LME_23UFB	LME-112NFB	LME_12NFB	LME-523NFB	LME_23NFB	LHE-512AFB	LHE_12AFB						
LME-123UFB	LME_23UFB	LME-212NFB	LME_12NFB	LME-102-S□	LME_02S	LHE-123A	LHE_23A						
LME-223UFB	LME_23UFB	LME-312NFB	LME_12NFB	LME-102-Q□	LME_02Q	LHE-223A	LHE_23A						
LME-323UFB	LME_23UFB	LME-412NFB	LME_12NFB	LME-102W-S□	LME_02WS	LHE-323A	LHE_23A						
LME-423UFB	LME_23UFB	LME-512NFB	LME_12NFB	LME-102W-Q□	LME_02WQ	LHE-423A	LHE_23A						
LME-523UFB	LME_23UFB	LME-112NFB	LME_12NFB	LME-102FB-S□	LME_02FBS	LHE-523A	LHE_23A						
LME-123UFB	LME_23UFB	LME-212NFB	LME_12NFB	LME-102FB-Q□	LME_02FBQ	LHE-123AFB	LHE_23AFB						
LME-223UFB	LME_23UFB	LME-312NFB	LME_12NFB	LME-102FBW-S□	LME_02FBWS	LHE-223AFB	LHE_23AFB						
LME-323UFB	LME_23UFB	LME-412NFB	LME_12NFB	LME-102FBW-Q□	LME_02FBWQ	LHE-323AFB	LHE_23AFB						
LME-423UFB	LME_23UFB	LME-512NFB	LME_12NFB	LME-112-S□	LME_12S	LHE-423AFB	LHE_23AFB						
LME-523UFB	LME_23UFB	LME-112NFB	LME_12NFB	LME-112-Q□	LME_12Q	LHE-523AFB	LHE_23AFB						
LME-123UFB	LME_23UFB	LME-212NFB	LME_12NFB	LME-112W-S□	LME_12WS	WEP-302	WEP_02						
LME-223UFB	LME_23UFB	LME-312NFB	LME_12NFB	LME-112W-Q□	LME_12WQ	WEP-402	WEP_02						
LME-323UFB	LME_23UFB	LME-412NFB	LME_12NFB	LME-112FB-S□	LME_12FBS	WEP-502	WEP_02						
LME-423UFB	LME_23UFB	LME-512NFB	LME_12NFB	LME-112FB-Q□	LME_12FBQ	WE-302	WE_02						
LME-523UFB	LME_23UFB	LME-112NFB	LME_12NFB	LME-112FBW-S□	LME_12FBWS	WE-402	WE_02						
LME-123UFB	LME_23UFB	LME-212NFB	LME_12NFB	LME-112FBW-Q□	LME_12FBWQ	WE-502	WE_02						
LME-223UFB	LME_23UFB	LME-312NFB	LME_12NFB	LME-123-S□	LME_23S	WEP-302FB	WEP_02FB						
LME-323UFB	LME_23UFB	LME-412NFB	LME_12NFB	LME-123-Q□	LME_23Q	WEP-402FB	WEP_02FB						
LME-423UFB	LME_23UFB	LME-512NFB	LME_12NFB	LME-123W-S□	LME_23WS	WEP-502FB	WEP_02FB						
LME-523UFB	LME_23UFB	LME-112NFB	LME_12NFB	LME-123W-Q□	LME_23WQ	WE-302FB	WE_02FB						
LME-123UFB	LME_23UFB	LME-212NFB	LME_12NFB	LME-123FB-S□	LME_23FBS	WE-402FB	WE_02FB						
LME-223UFB	LME_23UFB	LME-312NFB	LME_12NFB	LME-123FB-Q□	LME_23FBQ	WE-502FB	WE_02FB						
LME-323UFB	LME_23UFB	LME-412NFB	LME_12NFB	LME-123FBW-S□	LME_23FBWS	WME-202A	WME_02A						
LME-423UFB	LME_23UFB	LME-512NFB	LME_12NFB	LME-123FBW-Q□	LME_23FBWQ	WME-302A	WME_02A						
LME-523UFB	LME_23UFB	LME-112NFB	LME_12NFB	LMC-102	LMC_02	WME-402A	WME_02A						
LME-123UFB	LME_23UFB	LME-212NFB	LME_12NFB	LMC-102L	LMC_02L	WME-502A	WME_02A						
LME-223UFB	LME_23UFB	LME-312NFB	LME_12NFB	LMC-102W	LMC_02W	WME-2M2A	WME_M2A						
LME-323UFB	LME_23UFB	LME-412NFB	LME_12NFB	LMC-112	LMC_12	WME-3M2A	WME_M2A						
LME-423UFB	LME_23UFB	LME-512NFB	LME_12NFB	LMC-112L	LMC_12L	WME-4M2A	WME_M2A						
LME-523UFB	LME_23UFB	LME-112NFB	LME_12NFB	LMC-112W	LMC_12W	WME-5M2A	WME_M2A						
LME-123UFB	LME_23UFB	LME-212NFB	LME_12NFB	LMC-123	LMC_23	WME-202AFB	WME_02AFB						
LME-223UFB	LME_23UFB	LME-312NFB	LME_12NFB	LMC-123L	LMC_23L	WME-302AFB	WME_02AFB						
LME-323UFB	LME_23UFB	LME-412NFB	LME_12NFB	LMC-123W	LMC_23W	WME-402AFB	WME_02AFB						
LME-423UFB	LME_23UFB	LME-512NFB	LME_12NFB	LMS-102	LMS_02	WME-502AFB	WME_02AFB						
LME-523UFB	LME_23UFB	LME-112NFB	LME_12NFB	LMS-202	LMS_02	WME-2M2AFB	WME_M2AFB						
LME-123UFB	LME_23UFB	LME-212NFB	LME_12NFB	LMS-302	LMS_02	WME-3M2AFB	WME_M2AFB						
LME-223UFB	LME_23UFB	LME-312NFB	LME_12NFB	LMS-402	LMS_02	WME-4M2AFB	WME_M2AFB						
LME-323UFB	LME_23UFB	LME-412NFB	LME_12NFB	LMS-502	LMS_02	WME-5M2AFB	WME_M2AFB						
LME-423UFB	LME_23UFB	LME-512NFB	LME_12NFB	LMS-102L	LMS_02L	LKEH-102FAUL	LKEH_02FAUL						
LME-523UFB	LME_23UFB	LME-112NFB	LME_12NFB	LMS-102L	LMS_02L	LKEH-202FAUL	LKEH_02FAUL						
LME-123UFB	LME_23UFB	LME-212NFB	LME_12NFB	LMS-202L	LMS_02L	LKEH-302FAUL	LKEH_02FAUL						
LME-223UFB	LME_23UFB	LME-312NFB	LME_12NFB	LMS-302L	LMS_02L	LKEH-402FAUL	LKEH_02FAUL						
LME-323UFB	LME_23UFB	LME-412NFB	LME_12NFB	LMS-402L	LMS_02L	LKEH-102FCUL	LKEH_02FCUL						
LME-423UFB	LME_23UFB	LME-512NFB	LME_12NFB	LMS-502L	LMS_02L	LKEH-202FCUL	LKEH_02FCUL						
LME-523UFB	LME_23UFB	LME-112NFB	LME_12NFB										
LME-123UFB	LME_23UFB	LME-212NFB	LME_12NFB										
LME-223UFB	LME_23UFB	LME-312NFB	LME_12NFB										
LME-323UFB	LME_23UFB	LME-412NFB	LME_12NFB										
LME-423UFB	LME_23UFB	LME-512NFB	LME_12NFB										
LME-523UFB	LME_23UFB	LME-112NFB	LME_12NFB										
LME-123UFB	LME_23UFB	LME-212NFB	LME_12NFB										
LME-223UFB	LME_23UFB	LME-312NFB	LME_12NFB										
LME-323UFB	LME_23UFB	LME-412NFB	LME_12NFB										
LME-423UFB	LME_23UFB	LME-512NFB	LME_12NFB										
LME-523UFB	LME_23UFB	LME-112NFB	LME_12NFB										
LME-123UFB	LME_23UFB	LME-212NFB	LME_12NFB										
LME-223UFB	LME_23UFB	LME-312NFB	LME_12NFB										
LME-323UFB	LME_23UFB	LME-412NFB	LME_12NFB										
LME-423UFB	LME_23UFB	LME-512NFB	LME_12NFB										
LME-523UFB	LME_23UFB	LME-112NFB	LME_12NFB										