

### 1. Features

- Direct operation from AC source (AC220~240V) is available.
- New LED driving method is adopted.
- Product lineup consists of luminous flux 1000lm, color temperatures of 3000k, 4000k.
- High dielectric strength voltage is equipped.
- Small and thin size.
- Lineup of condensing lens. (option)
- Compliant with RoHS directives.
- Compliant with CE standard (Europe).



### 2. Application

- Downlights
- Spotlights and so on.

### 3. Outline drawing

- Unit : mm
- Tolerance :  $\pm 0.8$
- Tc point: Case temperature measuring point
- wire color: Brown(live), Blue(neutral)

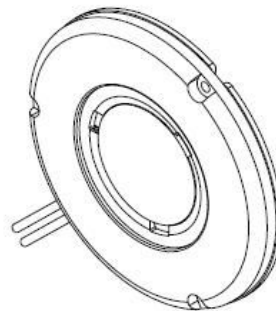
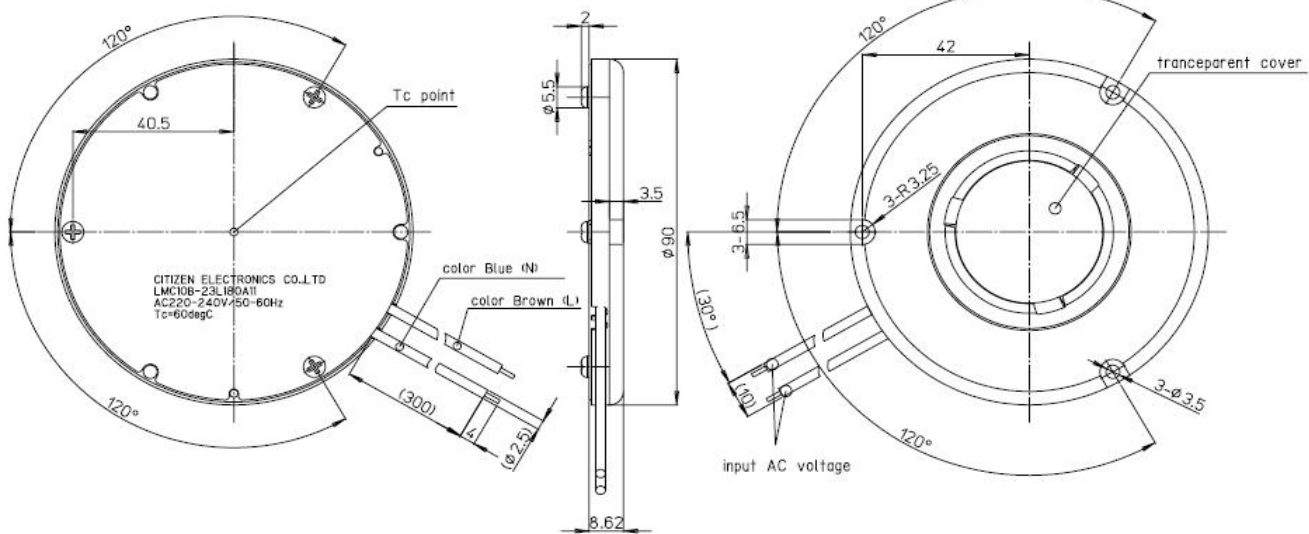


image drawing [scale:free]

## 4. Parts code

LMC10B - 23L180A - 11

Series \_\_\_\_\_  
 LMC10 : 1000lm module

Circuit type \_\_\_\_\_  
 B: Power supply built-in type

Source voltage \_\_\_\_\_  
 23 : AC 220 ~ AC 240 (V)

Lighting color \_\_\_\_\_  
 L1 : Energy Star Correlated Color Temperature 3000 (K)  
 W1 : Energy Star Correlated Color Temperature 4000 (K)

Our internal control No.

Directive characteristic  
 A : FWHM 120 deg.

General color rendering index  
 Ra= 80

## 5. Performance

## (1)Absolute Maximum Rating

Parameter	Symbol	Rating Value	Unit
Input voltage	Vin	264	V
Operating temperature range	Top	- 20 ~ + 40	°C
Storage temperature range	Tst	- 30 ~ + 65	°C
Case temperature	Tcmax	65	°C
Dielectric strength voltage *1	Viso(rms)	4	KV

\*1 Between the end of the wire of power source input and the module surface, Ta=25°C,  
 40~60%RH, AC (50Hz,60Hz), for one minutes.

## (2)Recommended Operating Range

Parameter	Symbol	Rating Value	Unit
Input voltage	Vin	220 ~ 240	V
Input frequency	Frq	50 ~ 60	Hz
Ambient temperature	Ta	- 20 ~ + 40	°C
Case temperature	Tc	60	°C

## (3)Electro-optical charancteristics 1

(Vin= 220 V、Frq=50Hz、Tc= 60℃)

Model	Input power	Luminous flux	Efficacy	Color temperature	CRI *2	Directive characteristic
	P[W]	Φv[lm]	LPW[lm/W]	CCT[K]	Ra	FWHM[deg.]
LMC10B-23L180A-11	22	1000	46	3000	80	120
LMC10B-23W180A-11	22	1080	49	4000	80	120

## (4)Electro-optical characteristics 2

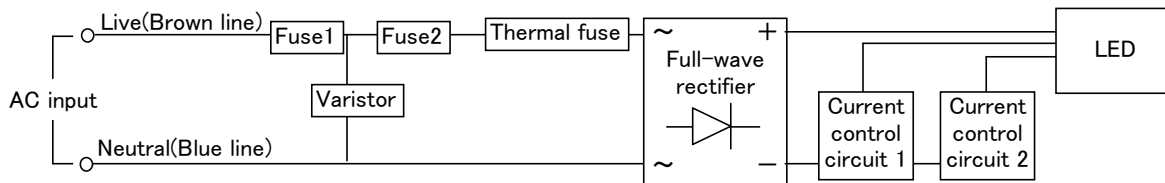
(Vin= 220 V、Frq=50Hz、Tc= 60℃)

Mode	Current consumption	Power factor	LED off duration	Flicker frequency
	I[mA]	PF[%]	Toff[%]	[Hz]
LMC10B-23L180A-11	105	97	29	100
LMC10B-23W180A-11	105	97	29	100

\*2 General color rendering index

\*3 Total harmonic distortion

Module Block diagram

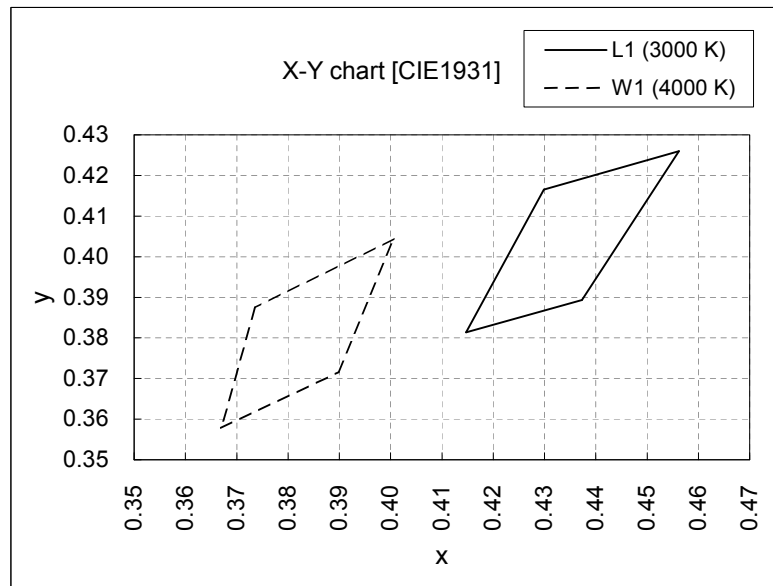


- Material of rear of the product is aluminium. For the sake of safety, earth connection must be avoided.

## Chromaticity coodinates

Color rank		x	y
	a	0.456	0.426
	b	0.430	0.417
	c	0.415	0.381
	d	0.437	0.389

Color rank		x	y
	a	0.401	0.404
	b	0.374	0.387
	c	0.367	0.358
	d	0.390	0.372



## 6. Precautions for use

### (1) Usage environment and storage

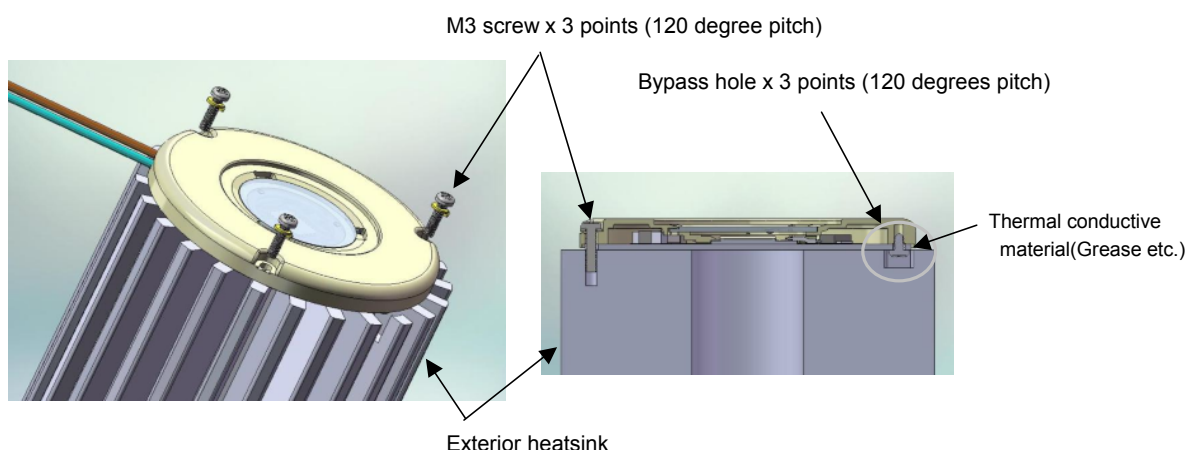
- Do not use or store the product under the environment where gas of chlorine, sulfur, acidity, chlorine, or salt are compressed or condensed, or any substance which causes corrosion exists. Avoid using the product in the sealed space.
- In the case the product is used by bonding, or connected to other parts as one unit, ensure that there is no quality influence on the product through an appropriate verification.
- Store the product in the ambient temperature of 5-40 degree C, humidity of 20-70%, Recommended storage period is three(3) months. If you use the product after 3 months are passed, please check electrical connectivity before use.
- Use in dry place in doors. (The product is not waterproof.)
- Do not use as a light fitting or an indicating light for an emergency exit.
- Do not connect the product to the fitting which connects to diming equipment.

### (2) Handling

- For the sake of safety, do not look at LED lighting source directly.
- Flicker is created due to direct operation from AC source.  
Sufficient verification is required when the product is equipped with a device.
- Since this product is designed so as to be used as being assembled in a general lighting fixture, please do not use this product only.  
When assembling to a lighting fixture, ensure sufficient evaluation as a lighting fixture.
- Reflow soldering is not applicable.  
Ultrasonic cleaning is not applicable.
- Do not use cleaning agent nor chemical agent as they can cause discoloration or quality deterioration.
- Do not add excessive shock by a drop and so on nor vibration.
- Avoid contacting the product with a sharp metallic nail and so on to the resin portion.  
Do not bend nor twist by adding exterior stress.  
Such handling brings about stress to the soldering part or to the insulation layer of PCB and causes the product no-lighting up, shortning lifetime and destruction as a worst case.
- As LEDs of this product are driven by applying AC source directly, LED part is in high voltage. Do not detach the transparent cover which is equipped covering LED top face of the module, nor use the product without the cover, as such usage is very risky.
- Although this product is equipped with fuses and a temperature fuse, ensure safety measures sufficiently on your product.
- When using this product, make sure to check that there is no contamination nor foreign substances on the transparent cover over the light emission part.  
(For example, black dots, colored tapes or markings etc.)  
Or, in the worst-case scenario, such contamination or foreign substances on the transparent cover cause melting of the cover.

### (3) Fixing to a heatsink

- This product should be secured firmly by fastening three M3 screws as shown in the under drawing. When screwing, pay attention not to add stress to the product.
- Material of rear of the product is aluminium.  
When fixing, place thermal conductive material (sheet or grease et cetera) which is heat conductive between the rear of the product and the heatsink and check carefully whether the product and the heatsink are fully bonded before use.
- As three salients by screws are on the rear of the product (heatsink fixing face) at 120 degrees pitch, create bypass holes for them on the heatsink side.
- Do not add any additional process such as mounting holes.  
Do not replace the wiring or disassemble.



### (4) Handling of static electricity

- As these products are sensitive to statistics electricity charge, pay attention when handling and take measures to prevent any static electricity being produced by wearing of a wristband or anti-static gloves and so on.
- All equipment and devices relating to this product must be properly grounded.
- After assembling in device, make sure that there is no damage (leak).
- Detect any damage due to static by a light-on test.
- Although dielectric strength voltage of this product is 4KV(rms), as for the dielectric strength of the final product, design it at your company and conduct sufficient verification.

### (5) Driving circuit

- This product must be used within the range of rated voltage.

### (6) Heat generation

- This product is designed in consideration of heat release by a luminair, therefore a heatsink must be fixed to the product.  
If this product is used without fixing to a heatsink, smoking and/or ignition can occur.
- Appropriate heat release design is required to use this product efficiently.  
As for heat generation, pay attention to use within the range of rating of the case temperature.
- Factors responsible for an increase in temperature include heat geration attributed to ambient temperature conditions or power dissipation. Thus, drive conditions should be taken into consideration, depending on ambient temperature ( $T_a$ ).

### (7) Others

- This product complies with RoHS directives.

## 7. Precautions with regard to product use

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