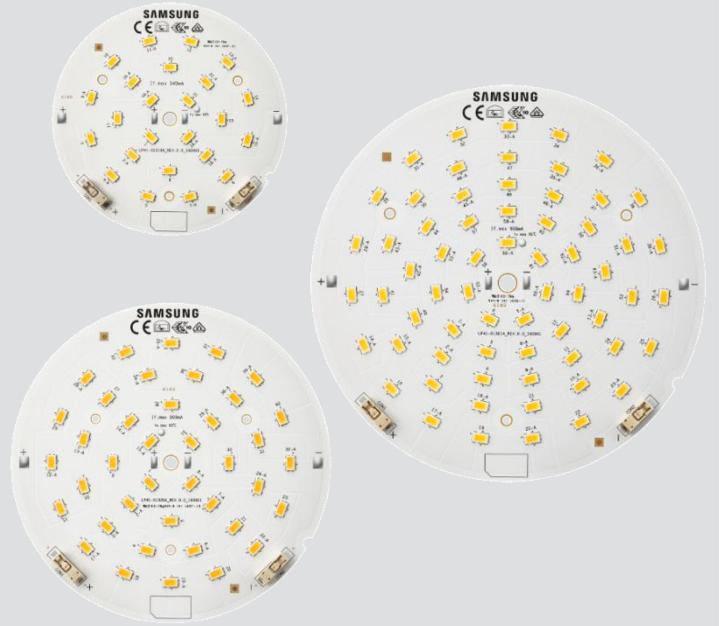


## LED Module Down Light Series

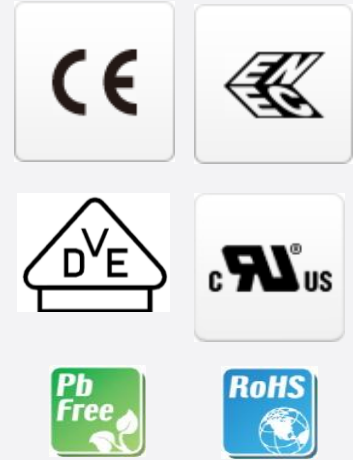
# Round-090C Round-110C Round-130C



Samsung Down-Light Modules enable 4inch to 8inch down light design with better uniformity and high reliability

### Features & Benefits

- High efficacy down-light modules with latest LED technology from Samsung
- Suitable for various application including general flood, spot and ceiling light
- Best color consistency derived from Samsung's extensive binning expertise



### Applications

Indoor Lighting:

- Replace CFLs
- Down Light
- Wall Light

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## 1. Product Code Information

### Round-090C CRI80

Nominal CCT (K)	Product Code
3000	SI-N8V0814B0WW
3500	SI-N8U0814B0WW
4000	SI-N8T0814B0WW

### Round-110C CRI80

Nominal CCT (K)	Product Code
3000	SI-N8V1714B0WW
3500	SI-N8U1714B0WW
4000	SI-N8T1714B0WW

### Round-130C CRI80

Nominal CCT (K)	Product Code
3000	SI-N8V2816B0WW
3500	SI-N8U2816B0WW
4000	SI-N8T2816B0WW

## 2. Characteristics

### Round-090C, Round-110C, Round-130C

Item	Rating	Unit	Remark
Rated Lifetime	>50,000	hour	L70B50 @ $t_{p,50} = 80$ °C
Ingress Protection (IP)	no rating	-	
Ambient / Operating Temperature ( $t_a$ )	-20 ~ +50	°C	
Storage Temperature	-30 ~ +80	°C	
Beam Angle	115	°	±5

## Round-090C CRI80

Item	Nom. CCT (K)	Rating			Unit	Remark
		Min.	Typ.	Max.		
Luminous Flux ( $\Phi_v$ )	3000	1170	1250	-	lm	$I_f = 350 \text{ mA}$ $t_p = 25 \text{ }^\circ\text{C}$
	3500	1190	1270	-		
	4000	1230	1310	-		
Luminous Efficacy	3000	-	150	-	lm/W	
	3500	-	152	-		
	4000	-	157	-		
Operating Voltage ( $V_f$ )		22.8	23.9	25.0	Vdc	
Power Consumption		-	8.4	8.8	W	
Luminous Flux ( $\Phi_v$ )	3000	-	1200	-	lm	
	3500	-	1220	-		
	4000	-	1250	-		
Luminous Efficacy	3000	-	146	-	lm/W	
	3500	-	148	-		
	4000	-	152	-		
Operating Voltage ( $V_f$ )		-	23.6	-	Vdc	
Power Consumption		-	8.3	-	W	
CCT	3000	-	3040	-	K	$I_f = 350 \text{ mA}$ $t_p = 25 \text{ }^\circ\text{C}$
	3500	-	3450	-		
	4000	-	4000	-		
Color Rendering Index (Ra)		80	-	-	-	
R9		0	-	-	-	
Operating Current ( $I_f$ )		-	350	540	mA	

※ Operating current tolerance may be  $\pm 5\%$ .

## Round-110C CRI80

Item	Nom. CCT (K)	Rating			Unit	Remark
		Min.	Typ.	Max.		
Luminous Flux ( $\Phi_v$ )	3000	2320	2460	-	lm	$I_f = 700 \text{ mA}$ $t_p = 25 \text{ }^\circ\text{C}$
	3500	2350	2490	-		
	4000	2420	2570	-		
Luminous Efficacy	3000	-	144	-	lm/W	
	3500	-	146	-		
	4000	-	150	-		
Operating Voltage ( $V_f$ )		23.3	24.5	25.8	Vdc	
Power Consumption		-	17.1	18.1	W	
Luminous Flux ( $\Phi_v$ )	3000	-	2350	-	lm	
	3500	-	2380	-		
	4000	-	2460	-		
Luminous Efficacy	3000	-	139	-	lm/W	
	3500	-	141	-		
	4000	-	146	-		
Operating Voltage ( $V_f$ )		-	24.2	-	Vdc	
Power Consumption		-	16.9	-	W	
CCT	3000	-	3070	-	K	$I_f = 700 \text{ mA}$ $t_p = 25 \text{ }^\circ\text{C}$
	3500	-	3490	-		
	4000	-	4020	-		
Color Rendering Index (Ra)		80	-	-	-	
R9		0	-	-	-	
Operating Current ( $I_f$ )		-	700	900	mA	

※ Operating current tolerance may be  $\pm 5\%$ .

## Round-130C CRI80

Item	Nom. CCT (K)	Rating			Unit	Remark
		Min.	Typ.	Max.		
Luminous Flux ( $\Phi_v$ )	3000	3720	3950	-	lm	
	3500	3780	4010	-		
	4000	3900	4140	-		
Luminous Efficacy	3000		143	-	lm/W	$I_f = 700 \text{ mA}$ $t_p = 25 \text{ }^\circ\text{C}$
	3500		145	-		
	4000		150	-		
Operating Voltage ( $V_i$ )		36.5	39.5	41.7	Vdc	
Power Consumption		-	27.7	29.2	W	
Luminous Flux ( $\Phi_v$ )	3000	-	3770	-	lm	
	3500	-	3830	-		
	4000	-	3950	-		
Luminous Efficacy	3000	-	139	-	lm/W	$I_f = 700 \text{ mA}$ $t_p = 55 \text{ }^\circ\text{C}$
	3500	-	141	-		
	4000	-	145	-		
Operating Voltage ( $V_i$ )		-	39.0	-	Vdc	
Power Consumption		-	27.3	-	W	
CCT	3000	-	3070	-	K	
	3500	-	3490	-		
	4000	-	4020	-		
Color Rendering Index (Ra)		80	-	-	-	$I_f = 700 \text{ mA}$ $t_p = 25 \text{ }^\circ\text{C}$
R9		0	-	-	-	
Operating Current ( $I_f$ )		-	700	900	mA	

※ Operating current tolerance may be  $\pm 5\%$ .

**Notes:**

- 1)  $t_p$ : temperature at which performance is specified; measured at "Tc point".
- 2) Samsung maintains a measurement tolerance of: Luminous flux:  $\pm 7\%$ , CRI:  $\pm 1.0$ , Voltage:  $\pm 5\%$ .

### Round-090C, Round-110C, Round-130C

Item	Nominal*	Life**	Max.***	Unit
Temperature	25 ( $t_p$ )	80 ( $t_{p,50}$ )	95 ( $t_c$ )	°C

#### Notes:

- \* Temperature used to specify performance of the module ( $t_p$ ).
- \*\* Rated maximum performance temperature at which lifetime is specified ( $t_{p,50}$ ).
- \*\*\* Rated maximum temperature, highest permissible temperature to avoid safety risk ( $t_c$ ).

All temperatures are measured at the designated “Tc point” as indicated on the module.

Please use heat-sink(or heat dissipation solution) with proper thermal capacity(operating wattage).

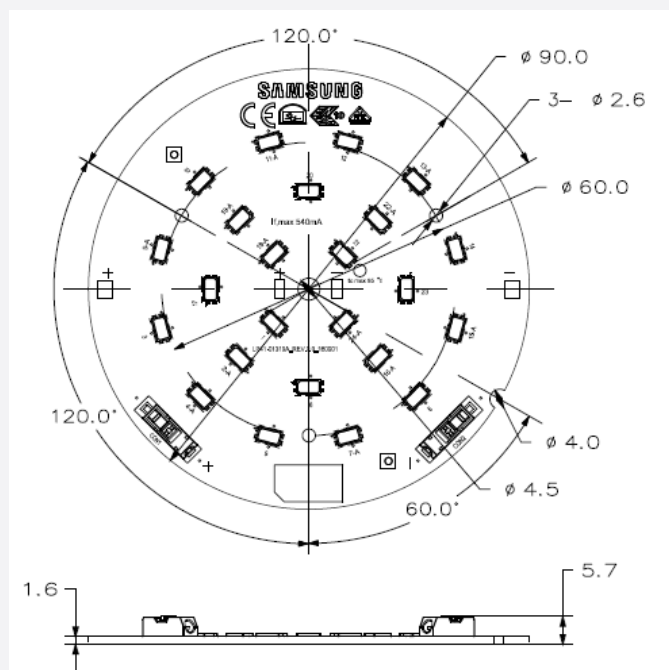
#### Color coordinate ( $t_p=25^{\circ}\text{C}$ )

Model Nom. CCT (K)		CIE 1931 Chromaticity Coordinates					
Round-090C(@If =350mA)	3000	CIE x	0.4208	0.4347	0.4429	0.4285	
		CIE y	0.3908	0.3957	0.4125	0.4074	
		Center	CIE x	0.4317	CIE y	0.4016	
	Round-110C(@If = 700mA)	3500	CIE x	0.3947	0.4097	0.4164	0.4008
			CIE y	0.3777	0.3849	0.4020	0.3943
			Center	CIE x	0.4054	CIE y	0.3897
Round-130C(@If = 700mA)		4000	CIE x	0.3707	0.3843	0.3891	0.3748
			CIE y	0.3647	0.3731	0.3895	0.3808
			Center	CIE x	0.3797	CIE y	0.3771

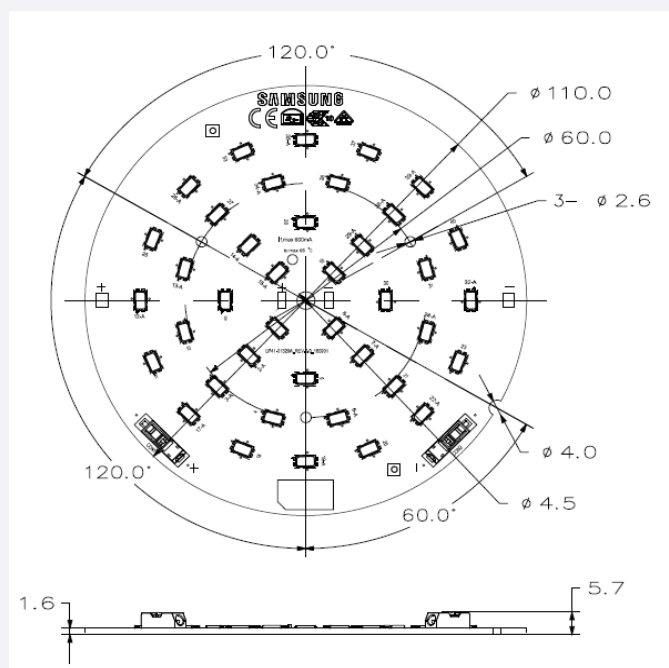
### 3. Structure and Assembly

#### a) Appearance

##### Round-090C

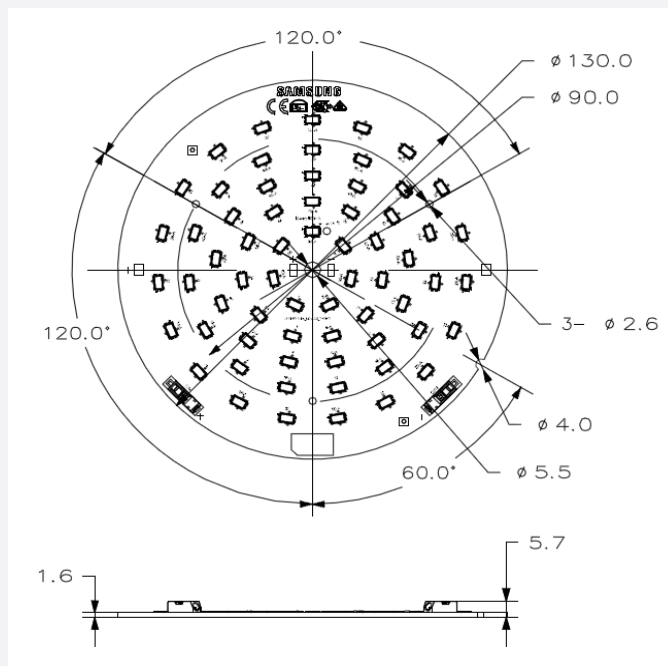


##### Round-110C





## Round-130C



### b) Dimension

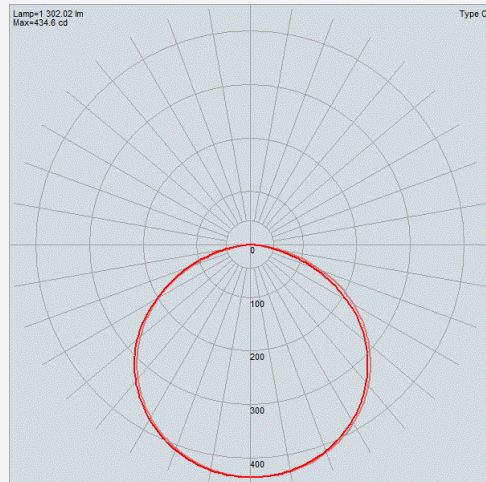
Item	Dimension			Tolerance	Unit
	Round-090C	Round-110C	Round-130C		
Module Diameter	90.0	110.0	130.0	$\pm 0.15$	mm
Module Height		5.7		$\pm 0.5$	mm
Screw Hole Size (M2.6 screw)		2.6		+0.10 / -0.20	mm
Module Weight	25.0	35.0	40.0	$\pm 10$	%

### c) Structure

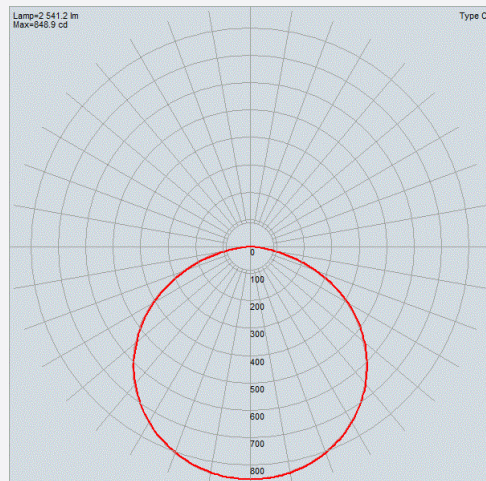
Item	Specification
LED	LM561B PLUS
PCB	CEM-3, White PSR, Cu 1oz Single layer
Connector	Re-workable poke-in connector type

## d) Light Distribution

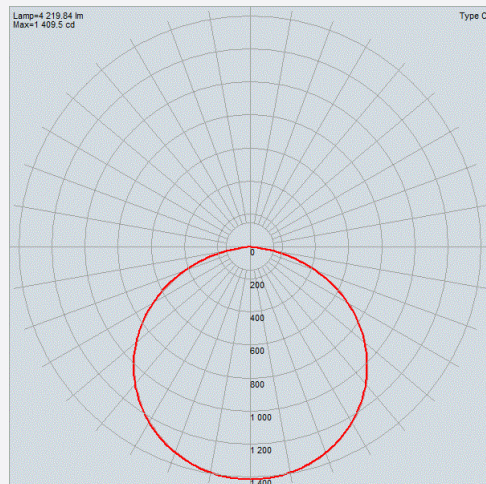
### Round-090C



### Round-110C

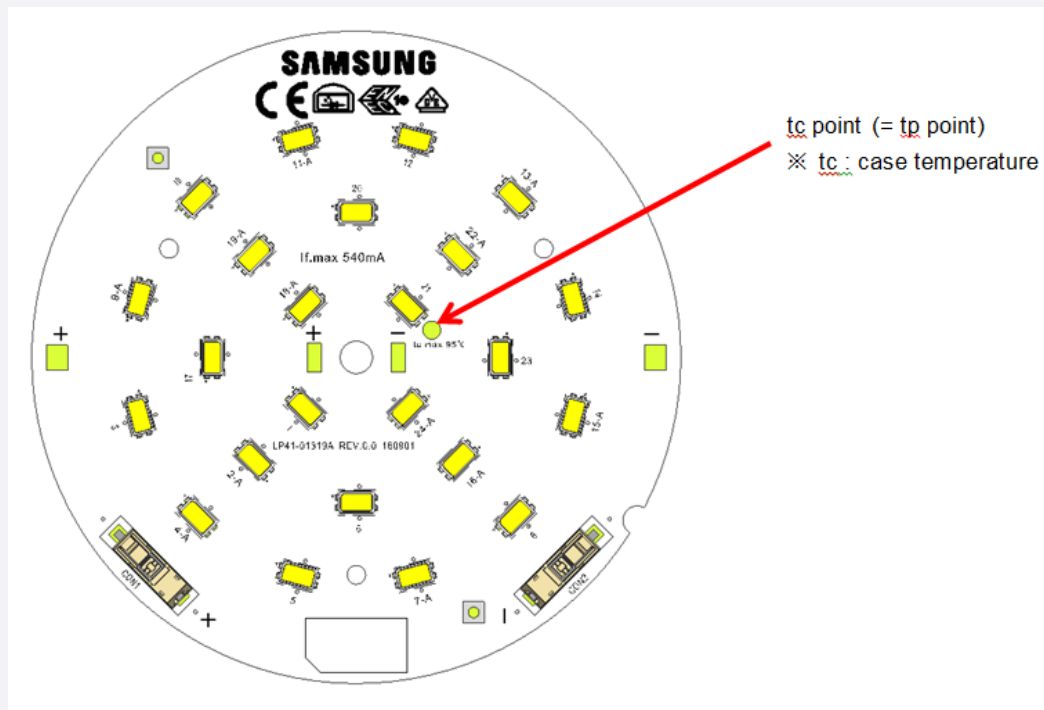


### Round-130C



### e) Thermal Management

Performance temperatures are measured on “Tc point” as indicated on the module.

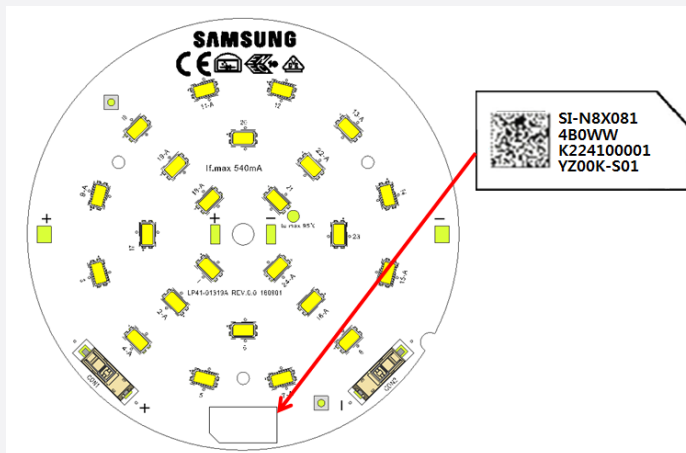


#### 4. Certification and Declaration

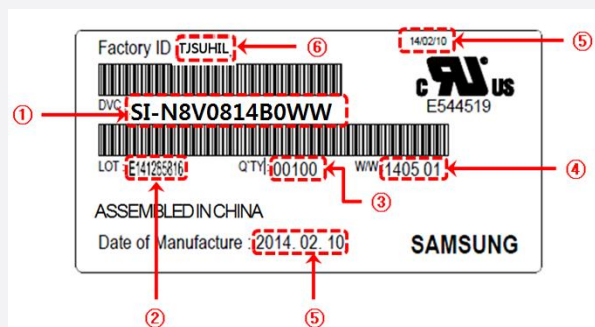
Item	Compliant to	Remark
Test & Certification	CE	EN 62031:2008/A1:2013 EN 62471:2008 IEC/PAS 62717:2011
	ENEC	Certificate No. : 40040077
	VDE	
	UL / cUL	File No : E344519
	Photo-biological Safety	IEC / EN 62471
Declaration	RoHS	Hazardous Substance & Material
	REACH	Hazardous Substance & Material

## 5. Label Structure

### a) Module Label



### b) Box Labels

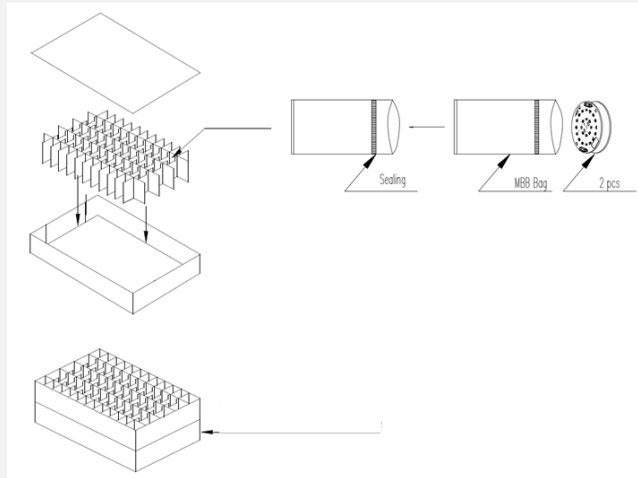


Number	Item	Round-04oD, Round-05oD, Round-06oD
①	Model Number (Product Code)	Refer to page 3
②	Lot No.	-
③	Packing Quantity	180 / 80 / 80
④	Product Date (year & week)	yyww
⑤	Product Date (year/month/date)	yy/mm/dd
⑥	UL Factory ID	TJSUHIL

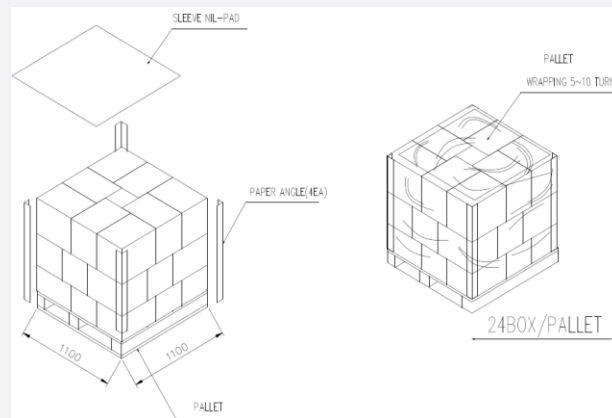
## 6. Packing Structure

### Packing Process (Case of Round-0110C)

Step 1



Step 2



Product	Packing	Quantity (modules)	Dimension (mm)			
			Length	Width	Height	Tolerance
Round-090C	Inner Box	60	390	306	96	±5
	Outer Box	180 (3Inner boxes)	426	313	305	±5
	Pallet	4,320 (24 boxes)	1100	1100	130	-
Round-110C / Round-130C	Inner Box	40	390	306	145	±2
	Outer Box	80 (2Inner boxes)	426	313	305	±5
	Pallet	1,920 (24 boxes)	1100	1100	130	-

## 7. Precautions in Handling & Use

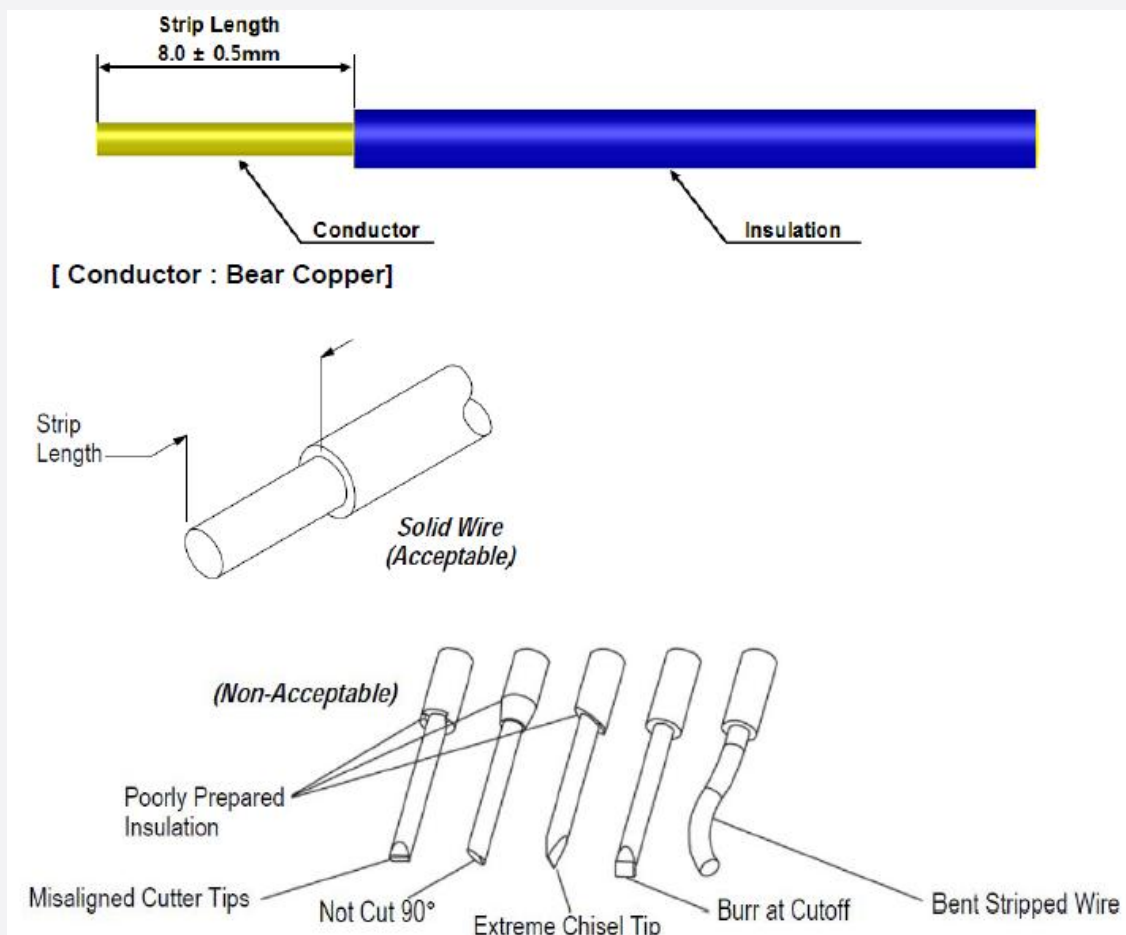
- 1) This LED Module should not be used in any type of fluid such as water, oil, organic solvent, etc. When washing is required, IPA is recommended to use. When using other solvents it should be confirmed beforehand whether the solvents may react with the Module material. The banned freon solvents should not be used. Do not clean using ultrasonic cleaner.
- 2) The LEDs are sensitive to the static electricity and surge. It is recommended to use a wrist band or anti-electrostatic glove when handling the LED Modules. If voltage exceeding the absolute maximum rating is applied to LEDs, it may cause damage or even destruction to LED devices. Damaged LEDs may show some unusual characteristics such as increase in leak current, lowered turn-on voltage, or abnormal lighting of LEDs at low current.
- 3) VOCs (Volatile Organic Compounds) can be generated from adhesives, flux, hardener or organic additives used in luminaires (fixtures). Transparent LED silicone encapsulant is permeable to those chemicals and they may lead a discoloration of encapsulant when they exposed to heat or light. This phenomenon can cause a significant loss of light emitted (output) from the luminaires (fixtures). In order to prevent these problems, we recommend users to know the physical properties of the materials used in luminaires, and they must be selected carefully.
- 4) Risk of sulfurization (or tarnishing)  
The LED uses a silver-plated lead frame and its surface color may change to black (or dark colored) when it is exposed to sulfur (S), chlorine (Cl) or other halogen compound. Sulfurization of lead frame may cause intensity degradation, change of chromaticity coordinates and, in extreme cases, open circuit. It requires caution. Due to possible sulfurization of lead frame, the LED Modules should not be used and stored together with oxidizing substances made of materials such as rubber, plain paper, lead solder cream, etc.
- 5) The resin area is very sensitive, please do not handle, press, touch or rub it.
- 6) Do not drop the Module or give shocks.
- 7) Do not store the Module in a dusty place or humid location.
- 8) Do not disassemble the Module.
- 9) Do not directly look into the lighted LED with naked eyes for a long period of time.
- 10) Please consider the creepage and clearance distance at the end product.

## Appendix . Applicable wire

### a) Applicable wire

Wire Range AWG No.	Number of Conductors/ Diameter of a conductors	Insulation Diameter (mm)	Conductor Type
24	1/0.51	1.35	Solid
22	1/0.64	1.48	
20	1/0.81	1.65	
18	1/1.02	1.86	
22	17/0.76 After soldering : $\Phi 0.9\text{mm Max}$	1.6	
20	21/0.95 After soldering : $\Phi 1.1\text{mm Max}$	1.78	Strand
18	23/1.1 After soldering : $\Phi 1.25\text{mm Max}$	2.21	

### b) Wire stripe length





# Legal and additional information.

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