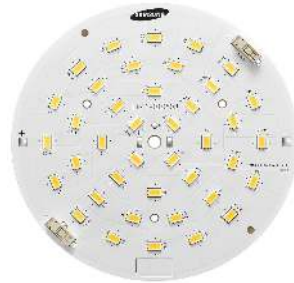


## Data Sheet



< Round-090C >



< Round-110C >



< Round-130C >

### Down Light Module

<b>Model Name</b>	Round-090C, Round-110C, Round-130C			
<b>Type</b>	Φ 90, Φ 110, Φ 130 x 5.7 [mm]			
<b>Parts No.</b>		<b>Round-090C</b>	<b>Round-110C</b>	<b>Round-130C</b>
	<b>3000K</b>	SI-N8V0814B0WW	SI-N8V1714B0WW	SI-N8V2816B0WW
	<b>3500K</b>	SI-N8U0814B0WW	SI-N8U1714B0WW	SI-N8U2816B0WW
	<b>4000K</b>	SI-N8T0814B0WW	SI-N8T1714B0WW	SI-N8T2816B0WW

**SAMSUNG ELECTRONICS CO.,LTD.**  
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## 1. Products and Application

This specification defines general specification and performance for Round Module.  
 Samsung Round Modules target to replace conventional down light with LED solutions.  
 Due to transferring LED, new luminaire transferred to LED can take more energy saving and longer life-time.

In special, Samsung has competitiveness in middle power LED solutions. This module adopts middle power LED to provide more homogeneous and higher efficient lights.

## 2. Basic Specification

No.	Item	Specifications			Unit	Remark
		Round-090C	Round-110C	Round-130C		
2-1	Dimension	Φ90 × 5.7 mm	Φ110 × 5.7 mm	Φ130 × 5.7 mm	mm	Tolerance:±0.15mm
2-2	Weight	25	35	40	g	Tolerance:±0.5g
2-3	Rated lifetime	> 50,000			hour	t <sub>c</sub> =85℃, L70B50
2-4	Ingress Protection	N/A			-	-
2-5	Operating Temperature	-30 ~ +50 ℃			℃	-
2-6	Storage Temperature	-40 ~ +85℃			℃	-

### 2-1. Round-090C

No.	Item	Specifications				Unit	Remark	
		Sym.	Min.	Nom.	Max.			
2-7	Luminous flux	3000K	Φ <sub>v</sub>	940	1050	1150	lm	@350mA, t <sub>p</sub> = 55℃
		3500K		960	1070	1170		
		4000K		990	1100	1210		
2-8	Efficiency	3000K	LPW	-	125	-	lm/W	@350mA, t <sub>p</sub> = 55℃
		3500K		-	127	-		
		4000K		-	131	-		
2-9	Color consistency		-	-	4	step	MacAdam @initial time	
2-10	Color Rendering Index	CRI	80	-	-	Ra	-	
2-11	Operating Current	I <sub>op</sub>	-	350	450	mA	@t <sub>p</sub> = 55℃	
2-12	Operating Voltage	V <sub>dc</sub>	22.8	24.0	27.1	V	@350mA, t <sub>p</sub> = 55℃	



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## 2-2. Round-110C

No.	Item		Specifications				Unit	Remark
			Sym.	Min.	Nom.	Max.		
2-7	Luminous flux	3000K	$\Phi_v$	1850	2050	2230	lm	@700mA, $t_p = 55^\circ\text{C}$
		3500K		1880	2080	2270		
		4000K		1950	2160	2340		
2-8	Efficiency	3000K	LPW	-	117	-	lm/W	@700mA, $t_p = 55^\circ\text{C}$
		3500K		-	119	-		
		4000K		-	123	-		
2-9	Color consistency			-	-	4	step	MacAdam @initial time
2-10	Color Rendering Index		CRI	80	-	-	Ra	-
2-11	Operating Current		Iop	-	700	750	mA	@ $t_p = 55^\circ\text{C}$
2-12	Operating Voltage		Vdc	23.3	25.0	27.7	V	@700mA, $t_p = 55^\circ\text{C}$

## 2-3. Round-130C

No.	Item		Specifications				Unit	Remark
			Sym.	Min.	Nom.	Max.		
2-7	Luminous flux	3000K	$\Phi_v$	3000	3330	3610	lm	@700mA, $t_p = 55^\circ\text{C}$
		3500K		3060	3370	3670		
		4000K		3170	3520	3780		
2-8	Efficiency	3000K	LPW	-	120	-	lm/W	@700mA, $t_p = 55^\circ\text{C}$
		3500K		-	121	-		
		4000K		-	127	-		
2-9	Color consistency			-	-	4	step	MacAdam @initial time
2-10	Color Rendering Index		CRI	80	-	-	Ra	-
2-11	Operating Current		Iop	-	700	750	mA	@ $t_p = 55^\circ\text{C}$
2-12	Operating Voltage		Vdc	37.9	39.7	45.0	V	@700mA, $t_p = 55^\circ\text{C}$

※  $t_p$  means the temperature of performance.

Measurement of tolerance of luminous flux becomes  $\pm 7\%$  in typical value and the measurement tolerance of the color coordinates are  $\pm 0.005$ .

## 3. Structure and Assembly

### 3-1. Appearance



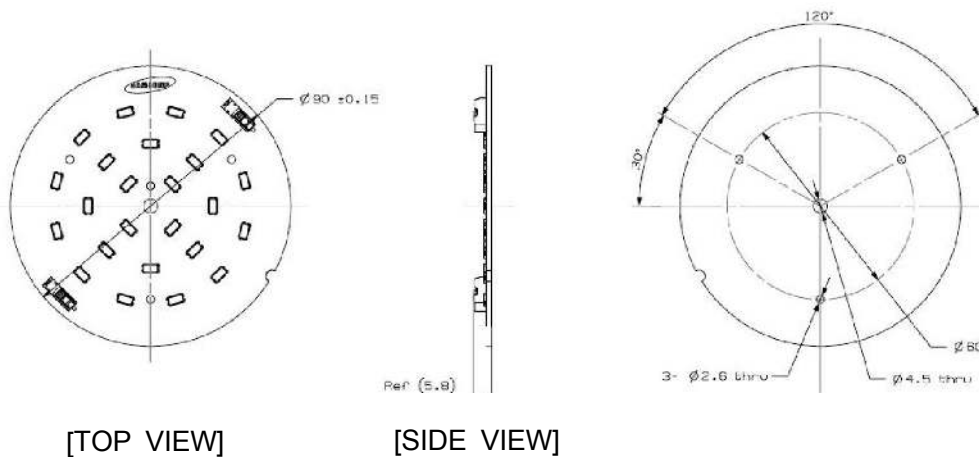
< Round-090C >

< Round-110C >

< Round-130C >

### 3-2. Dimension

#### (1) Round-090C

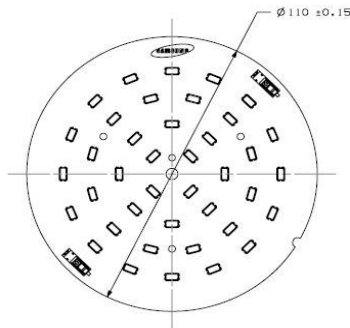


[TOP VIEW]

[SIDE VIEW]

Item		Specifications
D	Diameter of Module	Ø 90 mm
H1	Height of Module	5.7 mm

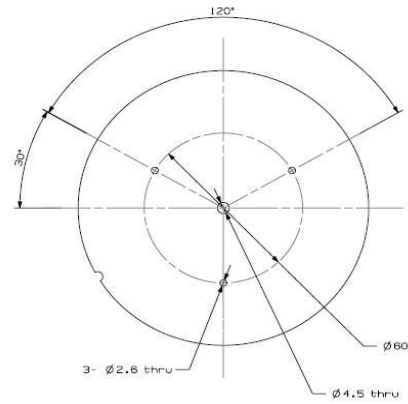
## (2) Round-110C



[TOP VIEW]

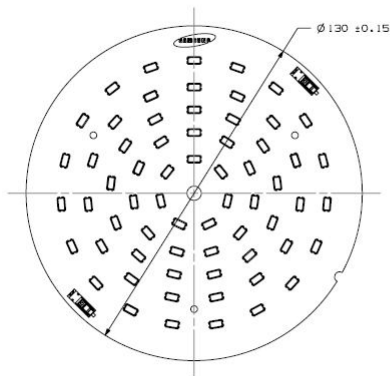


[SIDE VIEW]



Item		Specifications
D	Diameter of Module	Ø 110 mm
H1	Height of Module	5.7 mm

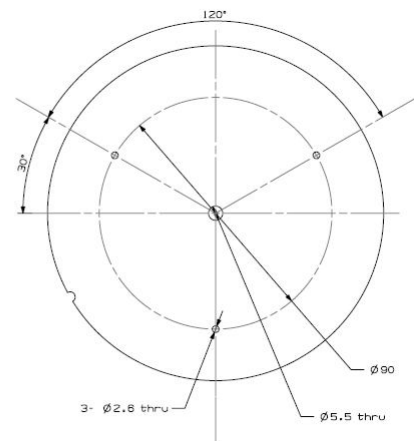
## (3) Round-130C



[TOP VIEW]



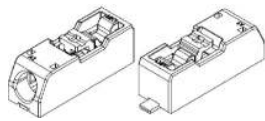
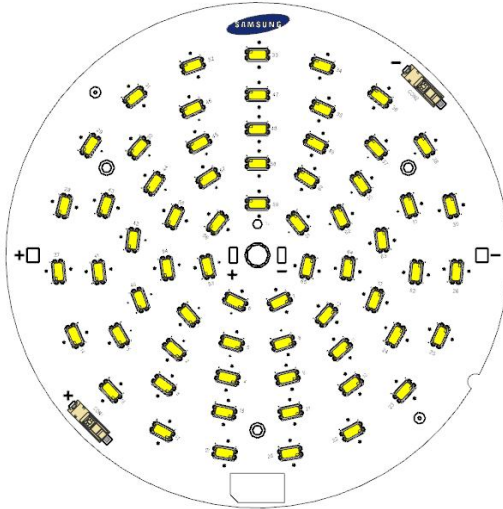
[SIDE VIEW]



Item		Specifications
D	Diameter of Module	Ø 130 mm
H1	Height of Module	5.7 mm

### 3-3. Assembly

This module adapts wire to board connector to connect between LED module and LED Driver.



AWG 24-18

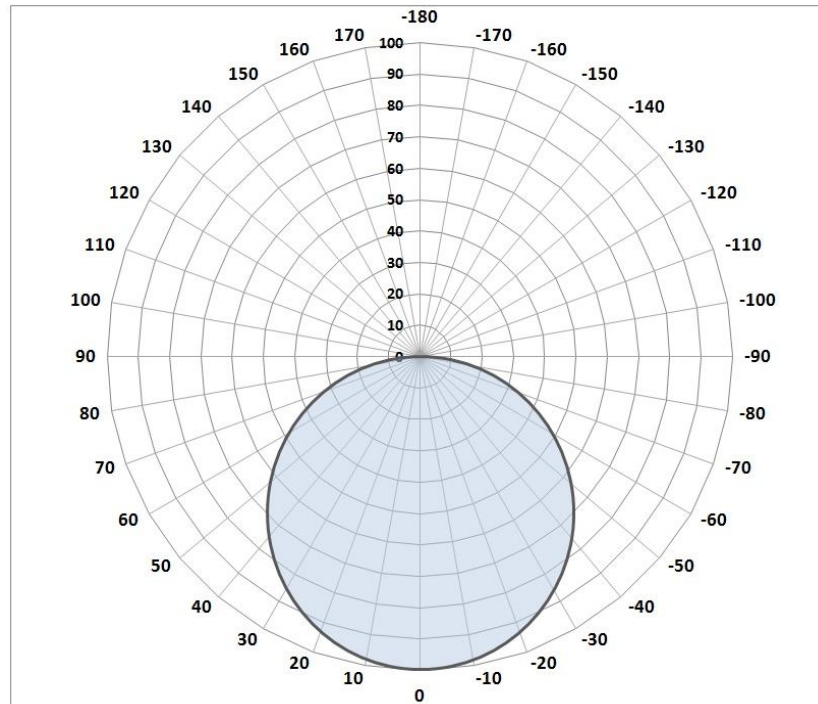
- (1) Insert solid conductors via push-in termination
- (2) Insert or remove fine-standard conductors by lightly pressing on push-button.

### 3-4. Structure

No.		Item	Specifications
Module Assembly	3-1	LED	LM561B
	3-2	PCB	Material : Copper, Solder mask and Epoxy
	3-3	Connector	AWG 24-18 Strip Length 6-7 mm

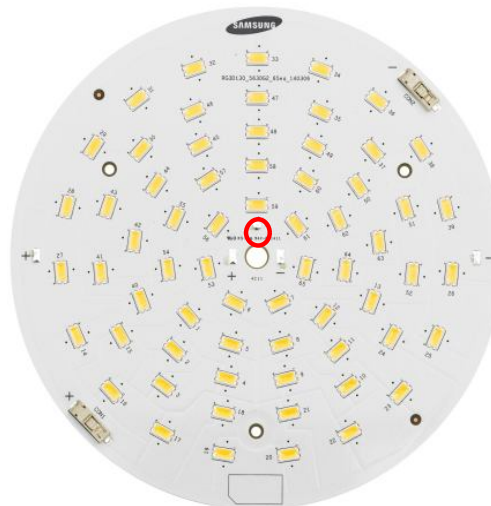
## 3-5. Light Distribution

(1) Polar Intensity Diagram : Beam Angle  $115 \pm 5\%$  [°]



## 3-6. Thermal Management

(1)  $t_c$  Point : See the below red mark.



(2)  $t_{p,50}$  : Max temperature to reach 50,000 hours

- Round-090C  $t_{p,50}$  = 85°C @ 450mA, L70B50 per LED module
- Round-110C  $t_{p,50}$  = 85°C @ 750mA, L70B50 per LED module
- Round-130C  $t_{p,50}$  = 85°C @ 750mA, L70B50 per LED module





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## 4. Approbation

Item	Compliant to	Result / Remark
General	Eye safety : IEC62471	LM561B
Hazardous Substance & Materials	ROHS/Reach	To be declared
Certification	CE (ErP)	IEC 62031:2008 IEC 62471:2008
	ENEC	IEC 62031:2008 IEC 62471:2008
	UL/cUL	E344519

## 5. Packing

### 5-1 Box

(1) Box : 426(L) x 313(W) x 305(h) (Tolerance :  $\pm 1.5$ mm)

(2) Q'ty

	1 Box		1 Pallet	
	Round-090C	Round-110C Round-130C	Round-090C	Round-110C Round-130C
Num. of modules	180 pcs	80 pcs	4320 pcs (24 boxes)	1920 pcs (24 boxes)

## 6. Precautions In Handling

1) LED Lighting for white light are devices which are materialized by combining white LEDs.

The color of white light can differ a little unusually to diffuser plate(sign-board panel).

2) Handling

- Don't drop the unit and don't give the unit any shocks.
- Don't storage the Module in a dusty place or room.
- Don't take the unit to pieces.

3) Cleaning

- This LED Module should not be used in any type of fluid such as oil, organic solvent, etc.
- It is recommended that IPA(Isopropyl Alcohol) be used as a solvent for cleaning the LED Module.
- When using other solvents, it should be confirmed beforehand whether the solvents will dissolve the package and the resin or not. Freon solvents should not be used to clean the LEDs because of worldwide regulations. Do not clean the LED Module by the ultrasonic.
- Before cleaning, a pre-test should be done to confirm whether any damage to the LED Lighting will occur.

4) Static Electricity

- Static electricity or surge voltage damages the LED Lighting.

5) Others

- If over voltage which exceeds the absolute maximum rating is applied to LED Lighting, it will cause damage Circuits(that LED is included) and result in destruction.
- Do not directly look into lighted LED with naked eyes for long time.

6) Risk of Sulfurization (or Tarnishing)

- The lead frame from Samsung Electronics is a plated package and it may change to black (or dark colored) when it is exposed to Ag (a), Sulfur (S), Cchlorine (Cl) or other halogen compound. It requires attention.
- Sulfide (Sulfurization) of the lead frame may cause a change of degradation intensity, chromaticity coordinates and it may cause open circuit in extreme cases. It requires attention.
- Sulfide (Sulfurization) of the lead frame may cause of storage and using with oxidizing substances together. Therefore, LED is not recommend to use and store with the below list.  
: Rubber, Plain paper, lead solder cream etc.



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## 7) Others

- If over voltage which exceeds the absolute maximum rating is applied to LED Lighting, it will cause damage Circuits(that LED is included) and result in destruction.
- Do not directly look into lighted LED with naked eyes for long time.

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