

LED Module Down Light Series

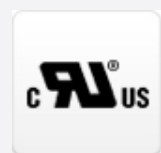
Round-040D Round-050D Round-060D



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
- Spot Light
- Wall Light



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1. Product Code Information

Round-040D CRI80

Nominal CCT (K)	Product Code
3000	SI-N8V0812B0WW
3500	SI-N8U0812B0WW
4000	SI-N8T0812B0WW

Round-050D CRI80

Nominal CCT (K)	Product Code
3000	SI-N8V1712B0WW
3500	SI-N8U1712B0WW
4000	SI-N8T1712B0WW

Round-060D CRI80

Nominal CCT (K)	Product Code
3000	SI-N8V2513B0WW
3500	SI-N8U2513B0WW
4000	SI-N8T2513B0WW



2. Characteristics

Round-040D, Round-050D, Round-060D

Item	Rating	Unit	Remark
Rated Lifetime	>50,000	hour	L70B50 @ $t_{p,50} = 90^{\circ}\text{C}$
Ingress Protection (IP)	no rating	-	
Ambient / Operating Temperature (t_a)	-20 ~ +50	$^{\circ}\text{C}$	
Storage Temperature	-30 ~ +80	$^{\circ}\text{C}$	
Beam Angle	115	$^{\circ}$	± 5



Round-040D CRI80

Item	Nom. CCT	Rating			Unit	Remark
	(K)	Min.	Typ.	Max.		
Luminous Flux (Φ_v)	3000	950	1020	-	lm	$I_f = 350 \text{ mA}$ $t_p = 25 \text{ }^\circ\text{C}$
	3500	980	1050	-		
	4000	1000	1070	-		
Luminous Efficacy	3000	-	123	-	lm/W	
	3500	-	127	-		
	4000	-	129	-		
Operating Voltage (V_f)		22.2	23.7	25.2	Vdc	
Power Consumption		-	8.3	8.9	W	
Luminous Flux (Φ_v)	3000	-	950	-	lm	
	3500	-	980	-		
	4000	-	1000	-		
Luminous Efficacy	3000	-	117	-	lm/W	$I_f = 350 \text{ mA}$ $t_p = 65 \text{ }^\circ\text{C}$
	3500	-	121	-		
	4000	-	123	-		
Operating Voltage (V_f)		-	23.3	-	Vdc	
Power Consumption		-	8.2	-	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	-	-	-	
Operating Current (I_f)		-	350	350	mA	

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



Round-050D CRI80

Item	Nom. CCT	Rating			Unit	Remark
	(K)	Min.	Typ.	Max.		
Luminous Flux (Φ_v)	3000	1950	2070	-	lm	$I_f = 700 \text{ mA}$ $t_p = 25 \text{ }^\circ\text{C}$
	3500	1990	2120	-		
	4000	2030	2160	-		
Luminous Efficacy	3000	-	125	-	lm/W	
	3500	-	128	-		
	4000	-	131	-		
Operating Voltage (V_f)		22.2	23.7	25.2	Vdc	
Power Consumption		-	16.6	17.7	W	
Luminous Flux (Φ_v)	3000	-	1940	-	lm	
	3500	-	1990	-		
	4000	-	2030	-		
Luminous Efficacy	3000	-	118	-	lm/W	$I_f = 700 \text{ mA}$ $t_p = 65 \text{ }^\circ\text{C}$
	3500	-	121	-		
	4000	-	124	-		
Operating Voltage (V_f)		-	23.5	-	Vdc	
Power Consumption		-	16.5	-	W	
CCT	3000	-	3040	-	K	$I_f = 700 \text{ mA}$ $t_p = 25 \text{ }^\circ\text{C}$
	3500	-	3450	-		
	4000	-	4000	-		
Color Rendering Index (Ra)		80	-	-	-	
Operating Current (I_f)		-	700	700	mA	

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



Round-060D CRI80

Item	Nom. CCT	Rating			Unit	Remark
	(K)	Min.	Typ.	Max.		
Luminous Flux (Φ_v)	3000	2840	3040	-	lm	$I_f = 700 \text{ mA}$ $t_p = 25^\circ\text{C}$
	3500	2920	3120	-		
	4000	2980	3180	-		
Luminous Efficacy	3000		123	-	lm/W	
	3500		126	-		
	4000		128	-		
Operating Voltage (V_f)		33.3	35.5	37.6	Vdc	
Power Consumption		-	24.9	26.4	W	
Luminous Flux (Φ_v)	3000	-	2850	-	lm	
	3500	-	2930	-		
	4000	-	2980	-		
Luminous Efficacy	3000	-	117	-	lm/W	$I_f = 700 \text{ mA}$ $t_p = 65^\circ\text{C}$
	3500	-	120	-		
	4000	-	122	-		
Operating Voltage (V_f)		-	34.9	-	Vdc	
Power Consumption		-	24.5	-	W	
CCT	3000	-	3040	-	K	
	3500	-	3450	-		
	4000	-	4000	-		
Color Consistency (initial) 3000 K, 3500 K, 4000 K		-	3	-	MacAdam step	
Color Rendering Index (Ra)		80	-	-	-	
Operating Current (I_f)		-	700	700	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: ± 1.0 , Voltage: $\pm 5\%$.



Round-040D, Round-050D, Round-060D

Item	Nominal*	Life**	Max.***	Unit
Temperature	25 (t_p)	90 ($t_{p,50}$)	100 (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 ($t_p=25^\circ\text{C}$)

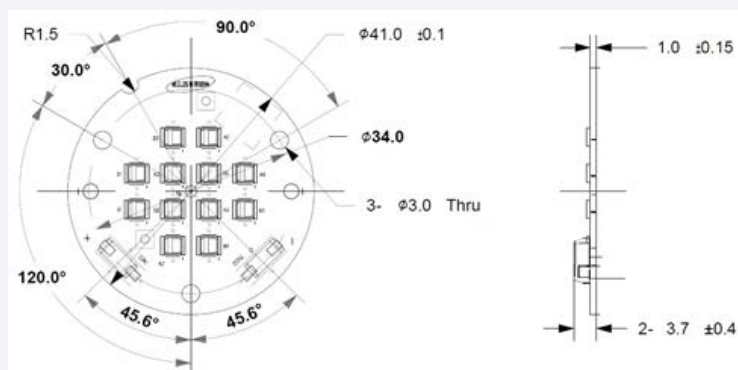
Model	Nom. CCT (K)	CIE 1931 Chromaticity Coordinates				
Round-040D(@If = 350mA) Round-050D(@If = 700mA) Round-060D(@If = 700mA)	3000	CIE x	0.4221	0.4353	0.4434	0.4297
		CIE y	0.3899	0.3945	0.4112	0.4062
		Center	CIE x	0.4326	CIE y	0.4004
	3500	CIE x	0.3970	0.4111	0.4176	0.4029
		CIE y	0.3782	0.3850	0.4014	0.3942
		Center	CIE x	0.4072	CIE y	0.3897
	4000	CIE x	0.3725	0.3855	0.3901	0.3765
		CIE y	0.3656	0.3736	0.3895	0.3812
		Center	CIE x	0.3812	CIE y	0.3775



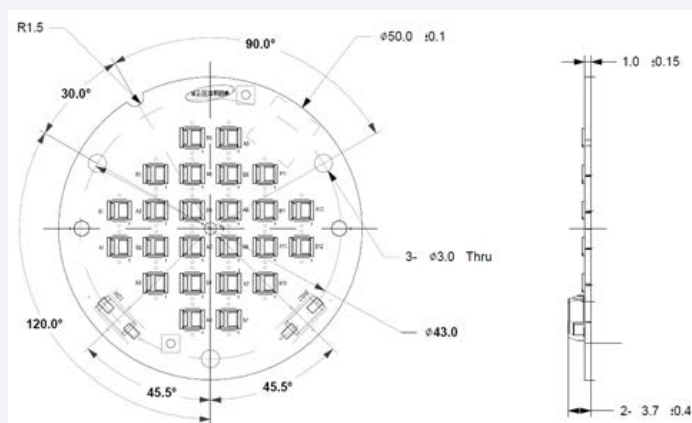
3. Structure and Assembly

a) Appearance

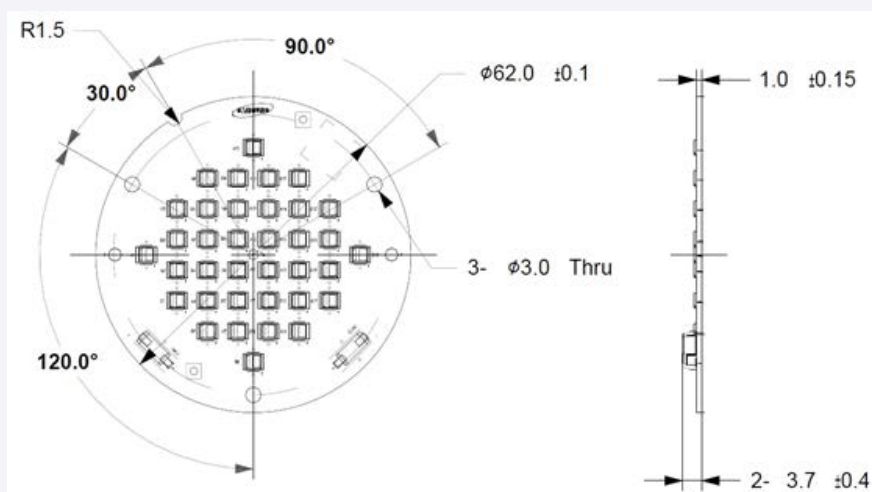
Round-040D



Round-050D



Round-060D



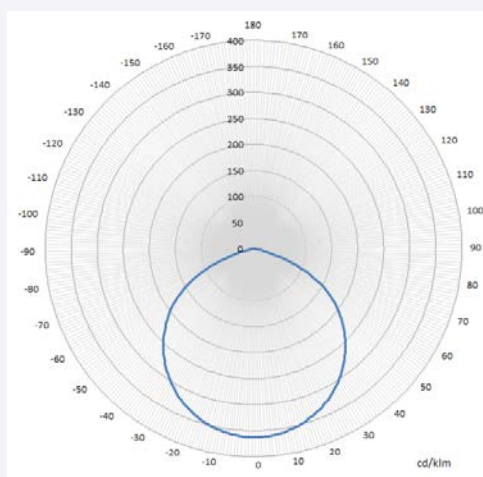
b) Dimension

Number	Item	Dimension	Tolerance	Unit	
1	Module Diameter	Round-040D	41.0	±0.1	mm
		Round-050D	50.0	±0.1	mm
		Round-060D	62.0	±0.1	mm
2	Module Height	3.7	±0.4	mm	
3	Screw Hole Size (M3 screw)	3.0	+0.10 / -0.20	mm	
4	Module Weight	Round-040D	3.0	±0.3	g
		Round-050D	4.6	±0.4	g
		Round-060D	7.0	±0.7	g

c) Structure

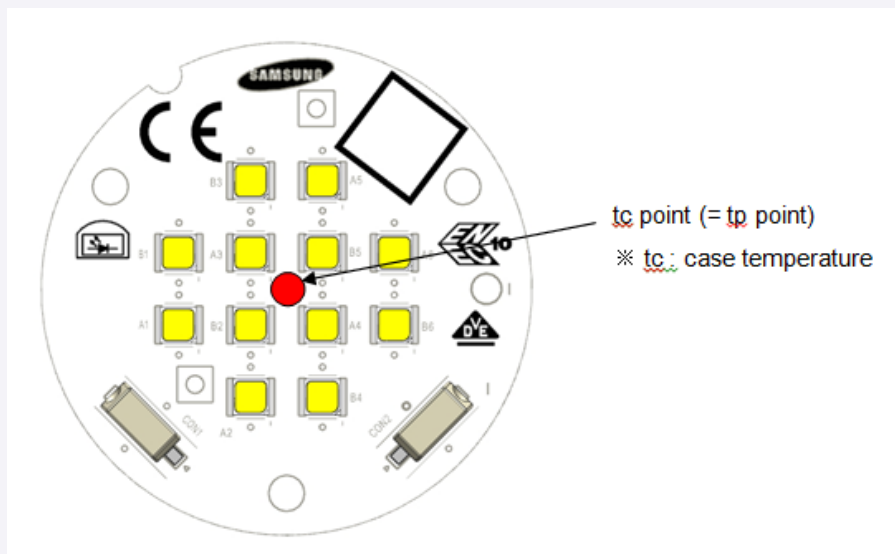
Item	Specification
LED	LM302A
PCB	CEM-3, White PSR, Cu 1oz Single layer
Connector	Re-workable poke-in connector type

d) Light Distribution



e) Thermal Management

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

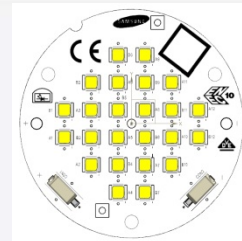
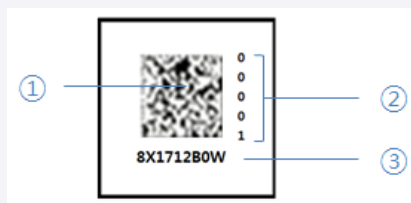


4. Certification and Declaration

Item	Compliant to	Remark
Test & Certification	CE	EN 62031:2008/A1:2013 EN 62471:2008 IEC/PAS 62717:2011
	ENEC	Certificate No. : 40042449
	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 (Case of Round-050D)



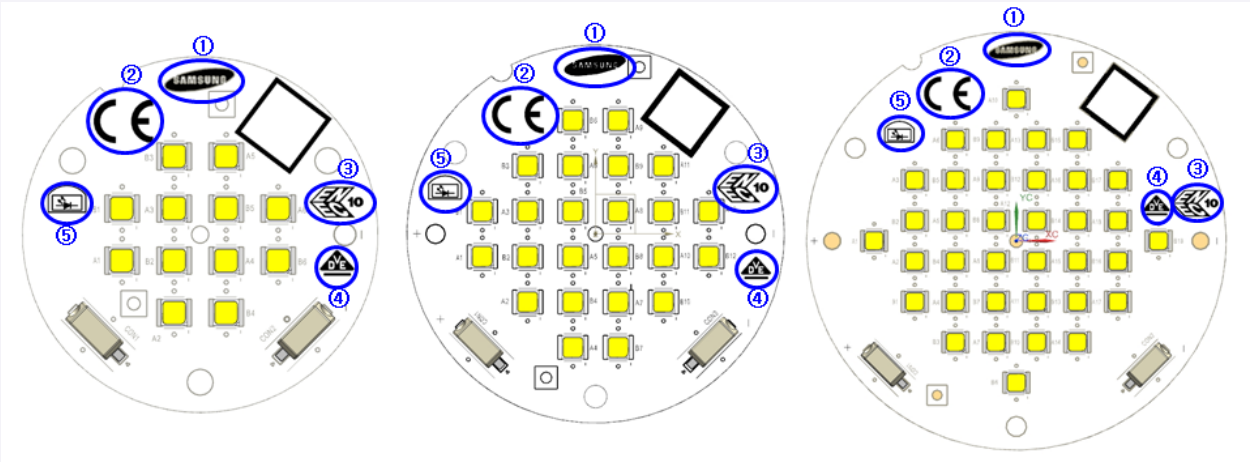
Number	Item	Round-040D, Round-050D, Round-060D
①	2D Barcode (QR)	-
②	Serial No.	-
③	Model Number (Print specification)	Refer to page 3

b) Box Labels



Number	Item	Round-040D, Round-050D, Round-060D
①	Model Number (Product Code)	Refer to page 3
②	Lot No.	-
③	Country of Origin	ASSEMBLED IN CHINA
④	Packing Quantity	512 / 360 / 270
⑤	Product Date (year & week)	yyww
⑥	Product Date (year/month/date)	yy/mm/dd

c) Certification Labels & Logo



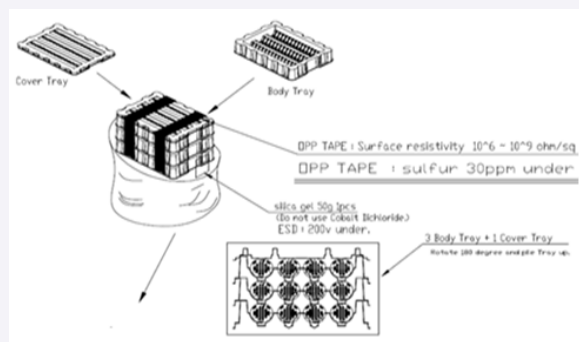
Number	Item	Remark
①	Samsung logo	-
②	CE Certificate mark	-
③	ENEC Certificate mark	-
④	VDE Certificate marks	-
⑤	Built-in module marks	-



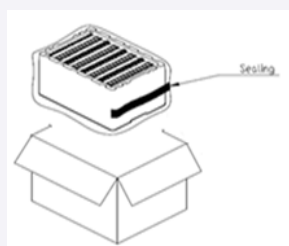
6. Packing Structure

Packing Process (Case of Round-050D)

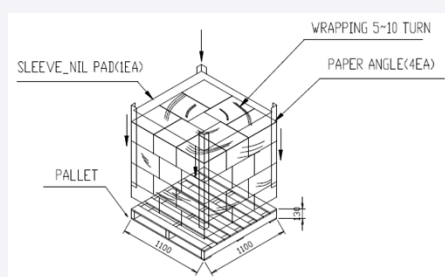
Step 1



Step 2



Step 3



Product	Packing	Quantity (modules)	Dimension (mm)			
			Length	Width	Height	Tolerance
Round-040D	Tray	128	425	305	55	±2
	Outer Box	512 (4 trays)	430	310	210	±5
	Pallet	16,384 (32 boxes)	1100	1100	870	-
Round-050D	Tray	120	425	305	71	±2
	Outer Box	360 (3 trays)	430	310	210	±5
	Pallet	11,520 (32 boxes)	1100	1100	870	-
Round-060D	Tray	90	425	305	71.5	±2
	Outer Box	270 (3 trays)	430	310	210	±5
	Pallet	8,640 (32 boxes)	1100	1100	870	-

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.



Legal and additional information.

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