

LED Module Spot Light Series

SLE-013
SLE-026
SLE-033
SLE-040



Samsung Spot Light Modules enable spot / down light design
with better uniformity and high reliability

Features & Benefits

- No dark area and smooth light output
- Easy installation by poke-in type holder
- Designed following Zhaga standard

Applications

Indoor Lighting:

- Down Light
- Spot Light
- Wall Light



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1. Product Code Information

SLE-013 CRI80

Nominal CCT (K)	Product Code
2700	SI-N8W1312B0WW
3000	SI-N8V1312B0WW
3500	SI-N8U1312B0WW
4000	SI-N8T1312B0WW
5000	SI-N8R1312B0WW

SLE-013 CRI90

Nominal CCT (K)	Product Code
2700	SI-N9W1312B0WW
3000	SI-N9V1312B0WW
3500	SI-N9U1312B0WW
4000	SI-N9T1312B0WW

SLE-026 CRI80

Nominal CCT (K)	Product Code
2700	SI-N8W2612B0WW
3000	SI-N8V2612B0WW
3500	SI-N8U2612B0WW
4000	SI-N8T2612B0WW
5000	SI-N8R2612B0WW

SLE-026 CRI90

Nominal CCT (K)	Product Code
2700	SI-N9W2612B0WW
3000	SI-N9V2612B0WW
3500	SI-N9U2612B0WW
4000	SI-N9T2612B0WW

SLE-033 CRI80

Nominal CCT (K)	Product Code
2700	SI-N8W3312B0WW
3000	SI-N8V3312B0WW
3500	SI-N8U3312B0WW
4000	SI-N8T3312B0WW
5000	SI-N8R3312B0WW

SLE-033 CRI90

Nominal CCT (K)	Product Code
2700	SI-N9W3312B0WW
3000	SI-N9V3312B0WW
3000	SI-N9U3312B0WW
4000	SI-N9T3312B0WW

SLE-040 CRI80

Nominal CCT (K)	Product Code
2700	SI-N8W4012B0WW
3000	SI-N8V4012B0WW
3500	SI-N8U4012B0WW
4000	SI-N8T4012B0WW
5000	SI-N8R4012B0WW

SLE-040 CRI90

Nominal CCT (K)	Product Code
2700	SI-N9W4012B0WW
3000	SI-N9V4012B0WW
3000	SI-N9U4012B0WW
4000	SI-N9T4012B0WW

2. Characteristics

SLE-013, SLE-026, SLE-033, SLE-040

Item	Rating	Unit	Remark
Rated Lifetime	>60,000	hour	L70B50 @ $t_{p,60} = 75\text{ }^{\circ}\text{C}$
Ingress Protection (IP)	no rating	-	
Ambient / Operating Temperature (t_a)	-20 ~ +50	$^{\circ}\text{C}$	
Storage Temperature	-30 ~ +75	$^{\circ}\text{C}$	
ESD	$\pm 4\text{ kV (contact) / } \pm 8\text{ kV (air)}$	kV	1500 pF / 330 Ω
Beam Angle	115	$^{\circ}$	± 5

SLE-013 CRI80

Item	Nom. CCT (K)	Rating			Unit	Remark
		Min.	Typ.	Max.		
Luminous Flux (Φ_v)	2700	990	1070	1150	lm	
	3000	1030	1120	1190		
	3500	1070	1160	1240		
	4000	1080	1180	1270		
	5000	1110	1220	1300		
Luminous Efficacy	2700	-	128	-	lm/W	
	3000	-	134	-		
	3500	-	139	-		
	4000	-	141	-		
	5000	-	146	-		
CCT	2700	-	2700	-	K	$I_f = 250\text{ mA}$ $t_p = 75\text{ }^{\circ}\text{C}$
	3000	-	3020	-		
	3500	-	3440	-		
	4000	-	3990	-		
	5000	-	5080	-		
Color Consistency (initial) 2700 K, 3000 K, 3500 K, 4000 K, 5000 K		-	3	-	MacAdam step	
Color Rendering Index (Ra)		80	-	-	-	
Operating Current (I_f)		-	250	350	mA	
Operating Voltage (V_f)		30.0	33.5	37.0	Vdc	
Power Consumption		-	8.4	12.8	W	

SLE-013 CRI90

Item	Nom. CCT (K)	Rating			Unit	Remark
		Min.	Typ.	Max.		
Luminous Flux (Φ_v)	2700	860	950	1050	lm	$I_f = 250 \text{ mA}$ $t_p = 75 \text{ }^\circ\text{C}$
	3000	870	980	1070		
	3500	890	1000	1090		
	4000	950	1050	1140		
Luminous Efficacy	2700	-	113	-	lm/W	
	3000	-	117	-		
	3500	-	119	-		
	4000	-	125	-		
CCT	2700	-	2680	-	K	
	3000	-	3000	-		
	3500	-	3420	-		
	4000	-	3960	-		
Color Consistency (initial) 2700 K, 3000 K, 3500 K, 4000 K		-	3	-	MacAdam step	
Color Rendering Index (Ra)		90	-	-	-	
Operating Current (I_f)		-	250	350	mA	
Operating Voltage (V_f)		30.0	33.5	37.0	Vdc	
Power Consumption		-	8.4	12.8	W	

SLE-026 CRI80

Item	Nom. CCT (K)	Rating			Unit	Remark
		Min.	Typ.	Max.		
Luminous Flux (Φ_v)	2700	2080	2230	2430	lm	
	3000	2200	2420	2560		
	3500	2270	2450	2610		
	4000	2330	2540	2720		
	5000	2360	2570	2770		
Luminous Efficacy	2700	-	133	-	lm/W	
	3000	-	144	-		
	3500	-	146	-		
	4000	-	152	-		
	5000	-	153	-		
CCT	2700	-	2700	-	K	
	3000	-	3020	-		
	3500	-	3460	-		
	4000	-	4000	-		
	5000	-	5070	-		
Color Consistency (initial) 2700 K, 3000 K, 3500 K, 4000 K, 5000 K		-	3	-	MacAdam step	
Color Rendering Index (Ra)		80	-	-	-	
Operating Current (I_f)		-	500	700	mA	
Operating Voltage (V_f)		30.0	33.5	37.0	Vdc	
Power Consumption		-	16.8	25.6	W	

$I_f = 500 \text{ mA}$
 $t_p = 75 \text{ }^\circ\text{C}$

SLE-026 CRI90

Item	Nom. CCT (K)	Rating			Unit	Remark
		Min.	Typ.	Max.		
Luminous Flux (Φ_v)	2700	1880	2050	2250	lm	$I_f = 500 \text{ mA}$ $t_p = 75 \text{ }^\circ\text{C}$
	3000	1910	2080	2300		
	3500	1950	2140	2360		
	4000	2040	2250	2440		
Luminous Efficacy	2700	-	122	-	lm/W	
	3000	-	124	-		
	3500	-	128	-		
	4000	-	134	-		
CCT	2700	-	2680	-	K	
	3000	-	3000	-		
	3500	-	3410	-		
	4000	-	3950	-		
Color Consistency (initial) 2700 K, 3000 K, 3500 K, 4000 K		-	3	-	MacAdam step	
Color Rendering Index (Ra)		90	-	-	-	
Operating Current (I_f)		-	500	700	mA	
Operating Voltage (V_f)		30.0	33.5	37.0	Vdc	
Power Consumption		-	16.8	25.6	W	

SLE-033 CRI80

Item	Nom. CCT (K)	Rating			Unit	Remark
		Min.	Typ.	Max.		
Luminous Flux (Φ_v)	2700	2910	3150	3370	lm	
	3000	3080	3320	3560		
	3500	3150	3390	3650		
	4000	3250	3510	3750		
	5000	3280	3550	3790		
Luminous Efficacy	2700	-	133	-	lm/W	
	3000	-	140	-		
	3500	-	143	-		
	4000	-	148	-		
	5000	-	150	-		
CCT	2700	-	2700	-	K	
	3000	-	3040	-		
	3500	-	3460	-		
	4000	-	4000	-		
	5000	-	5070	-		
Color Consistency (initial) 2700 K, 3000 K, 3500 K, 4000 K, 5000 K		-	3	-	MacAdam step	
Color Rendering Index (Ra)		80	-	-	-	
Operating Current (I_f)		-	700	900	mA	
Operating Voltage (V_f)		30.6	33.8	37.4	Vdc	
Power Consumption		-	23.7	33.7	W	

$I_f = 700 \text{ mA}$
 $t_p = 75 \text{ }^\circ\text{C}$

SLE-033 CRI90

Item	Nom. CCT (K)	Rating			Unit	Remark
		Min.	Typ.	Max.		
Luminous Flux (Φ_v)	2700	2380	2610	2830	lm	
	3000	2430	2660	2890		
	3500	2510	2740	2970		
	4000	2580	2820	3050		
Luminous Efficacy	2700	-	110	-	lm/W	
	3000	-	112	-		
	3500	-	116	-		
	4000	-	119	-		
CCT	2700	-	2680	-	K	$I_f = 700 \text{ mA}$ $t_p = 75 \text{ }^\circ\text{C}$
	3000	-	3000	-		
	3500	-	3410	-		
	4000	-	3930	-		
Color Consistency (initial) 2700 K, 3000 K, 3500 K, 4000 K		-	3	-	MacAdam step	
Color Rendering Index (Ra)		90	-	-	-	
Operating Current (I_f)		-	700	900	mA	
Operating Voltage (V_f)		30.6	33.8	37.4	Vdc	
Power Consumption		-	23.7	33.7	W	

SLE-040 CRI80

Item	Nom. CCT (K)	Rating			Unit	Remark
		Min.	Typ.	Max.		
Luminous Flux (Φ_v)	2700	3700	4010	4310	lm	
	3000	3810	4250	4570		
	3500	3980	4330	4740		
	4000	4110	4510	4960		
	5000	4150	4560	5010		
Luminous Efficacy	2700	-	131	-	lm/W	
	3000	-	138	-		
	3500	-	141	-		
	4000	-	147	-		
	5000	-	149	-		
CCT	2700	-	2700	-	K	
	3000	-	3040	-		
	3500	-	3450	-		
	4000	-	3990	-		
	5000	-	5070	-		
Color Consistency (initial) 2700 K, 3000 K, 3500 K, 4000 K, 5000 K	-	-	3	-	MacAdam step	
Color Rendering Index (Ra)	-	80	-	-	-	
Operating Current (I_f)	-	-	900	1000	mA	
Operating Voltage (V_f)	-	30.8	34.1	37.4	Vdc	
Power Consumption	-	-	30.7	36.5	W	

$I_f = 900 \text{ mA}$
 $t_p = 75 \text{ }^\circ\text{C}$

SLE-040 CRI90

Item	Nom. CCT (K)	Rating			Unit	Remark
		Min.	Typ.	Max.		
Luminous Flux (Φ_v)	2700	2990	3280	3540	lm	$I_f = 900 \text{ mA}$ $t_p = 75 \text{ }^\circ\text{C}$
	3000	3040	3330	3600		
	3500	3130	3410	3710		
	4000	3220	3530	3810		
Luminous Efficacy	2700	-	107	-	lm/W	
	3000	-	109	-		
	3500	-	111	-		
	4000	-	115	-		
CCT	2700	-	2680	-	K	
	3000	-	3000	-		
	3500	-	3420	-		
	4000	-	3940	-		
Color Consistency (initial) 2700 K, 3000 K, 3500 K, 4000 K		-	3	-	MacAdam step	
Color Rendering Index (Ra)		90	-	-	-	
Operating Current (I_f)		-	900	1000	mA	
Operating Voltage (V_f)		30.8	34.1	37.4	Vdc	
Power Consumption		-	30.7	36.5	W	

Notes:

- 1) t_a : temperature at which performance is specified (ambient temperature).
- 2) The module/LED is tested in pulsed condition (pulse width of 10 ms) at rated test current, $t_j = t_a = 25 \text{ }^\circ\text{C}$.
- 3) Samsung maintains a measurement tolerance of: Luminous flux: $\pm 7 \%$, CRI: ± 1.0 , Voltage: $\pm 5\%$.

SLE-013, SLE-026, SLE-033, SLE-040

Item	Nominal*	Life**	Max.***	Unit
Temperature	70 (t_p)	75 ($t_{p,60}$)	100 (t_c)	$^\circ\text{C}$

Notes:

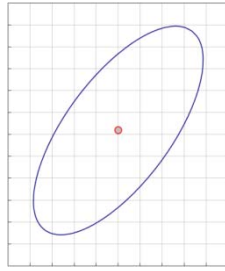
- * Temperature used to specify performance of the module (t_a).
- ** Rated maximum performance temperature at which lifetime is specified ($t_{p,50}$).
- *** Rated maximum temperature, highest permissible temperature to avoid safety risk (t_c).

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 Coordinates



MacAdam Ellipse
(2700 K, 3000 K, 3500 K, 4000 K, 5000 K)

CRI 80

Model	Nom. CCT (K)	MacAdam Ellipse 3-step				
		x	y	θ	a	b
SLE-013	2700	0.4579	0.4069	53.70	0.0081	0.0042
	3000	0.4332	0.3991	53.22	0.0083	0.0041
	3500	0.4072	0.3890	54.00	0.0093	0.0041
	4000	0.3805	0.3753	53.72	0.0094	0.0040
	5000	0.3430	0.3518	59.62	0.0082	0.0035
SLE-026	2700	0.4578	0.4069	53.70	0.0081	0.0042
	3000	0.4334	0.3995	53.22	0.0083	0.0041
	3500	0.4066	0.3888	54.00	0.0093	0.0041
	4000	0.3801	0.3759	53.72	0.0094	0.0040
	5000	0.3433	0.3519	59.62	0.0082	0.0035
SLE-033	2700	0.4581	0.4079	53.70	0.0081	0.0042
	3000	0.4330	0.4013	53.22	0.0083	0.0041
	3500	0.4066	0.3888	54.00	0.0093	0.0041
	4000	0.3804	0.3769	53.72	0.0094	0.0040
	5000	0.3434	0.3514	59.62	0.0082	0.0035
SLE-040	2700	0.4573	0.4064	53.70	0.0081	0.0042
	3000	0.4329	0.3999	53.22	0.0083	0.0041
	3500	0.4070	0.3890	54.00	0.0093	0.0041
	4000	0.3806	0.3760	53.72	0.0094	0.0040
	5000	0.3432	0.3511	59.62	0.0082	0.0035

Notes:

- 1) Chromaticity coordinates refer to ANSI C78.377-2008.
- 2) Samsung maintains ± 0.005 tolerance on Cx, Cy measurements.

CRI 90

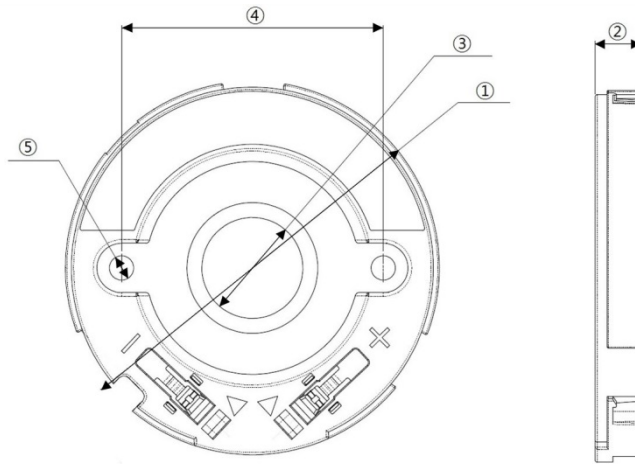
Model	Nom. CCT (K)	MacAdam Ellipse 3-step				
		x	y	θ	a	b
SLE-013	2700	0.4592	0.4070	53.70	0.0081	0.0042
	3000	0.4347	0.3997	53.22	0.0083	0.0041
	3500	0.4082	0.3886	54.00	0.0093	0.0041
	4000	0.3820	0.3765	53.72	0.0094	0.0040
SLE-026	2700	0.4590	0.4068	53.70	0.0081	0.0042
	3000	0.4351	0.3996	53.22	0.0083	0.0041
	3500	0.4083	0.3881	54.00	0.0093	0.0041
	4000	0.3822	0.3769	53.72	0.0094	0.0040
SLE-033	2700	0.4594	0.4074	53.70	0.0081	0.0042
	3000	0.4348	0.3997	53.22	0.0083	0.0041
	3500	0.4083	0.3880	54.00	0.0093	0.0041
	4000	0.3827	0.3753	53.72	0.0094	0.0040
SLE-040	2700	0.4592	0.4070	53.70	0.0081	0.0042
	3000	0.4348	0.3996	53.22	0.0083	0.0041
	3500	0.4079	0.3877	54.00	0.0093	0.0041
	4000	0.3824	0.3759	53.72	0.0094	0.0040

Notes:

- 1) Chromaticity coordinates refer to ANSI C78.377-2008.
- 2) Samsung maintains ± 0.005 tolerance on Cx, Cy measurements.

3. Structure and Assembly

a) Appearance

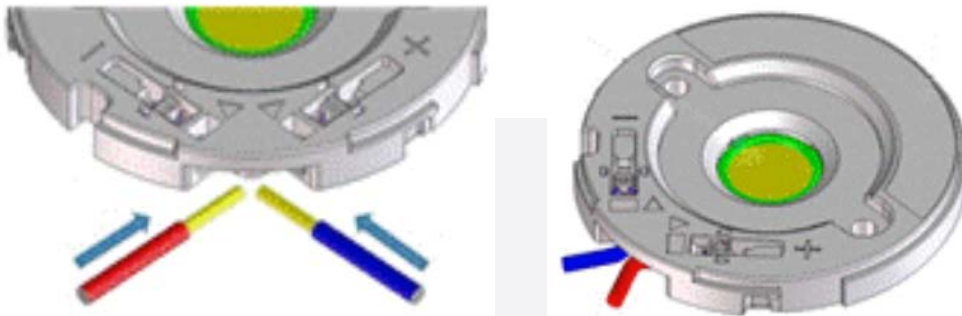


b) Dimension

Number	Item	Dimension	Tolerance	Unit	
①	Module Diameter	50	± 0.25	mm	
②	Module Height	6.1	± 0.25	mm	
③	Light Emitting Surface (LES) Diameter	SLE-013	13.5	$+0.15 / -0.20$	mm
		SLE-026	19	$+0.15 / -0.20$	mm
		SLE-033	19	$+0.15 / -0.20$	mm
		SLE-040	19	$+0.15 / -0.20$	mm
④	Distance Between Screw Holes	35	± 0.15	mm	
⑤	Screw Hole Size (M3 screw)	3.3	$+0.10 / -0.20$	mm	
	Module Weight	10	± 1.5	g	

c) Assembly

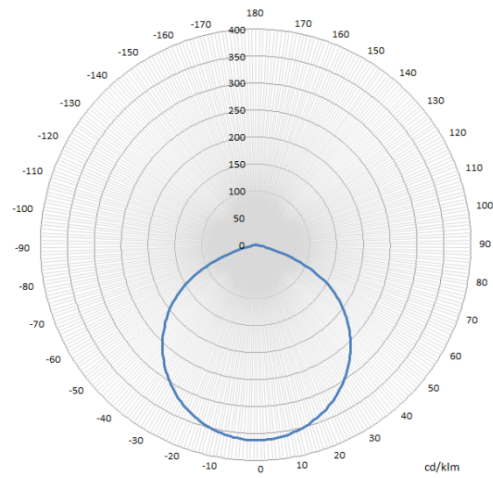
Connectors on the board are provided for easy wiring with the LED driver and between modules.



d) Structure

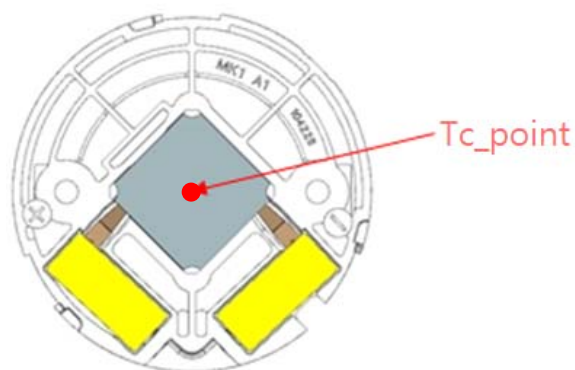
Item	Specification
LED	COB PKG 1 pc (LC013B / LC026B / LC033B / LC040B)
Socket	Material: PBT
Connector	Reworkable poke-in connector type
Wire	22~18 AWG ; terminal strip length of 8.0 ± 0.5 mm

e) Light Distribution



f) Thermal Management

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

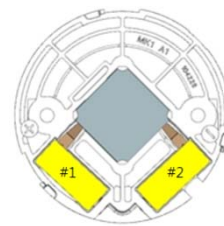
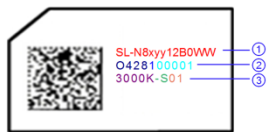


4. Certification and Declaration

Item	Compliant to	Remark
Test & Certification	CE	-
	ENEC	-
	VDE	-
	UL / cUL Recognized Component	COB and Holder received separately
	Photobiological Safety	IEC / EN 62471
Declaration	RoHS	Hazardous Substance & Material
	REACH	Hazardous Substance & Material

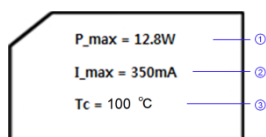
5. Label Structure

a) Module Label #1



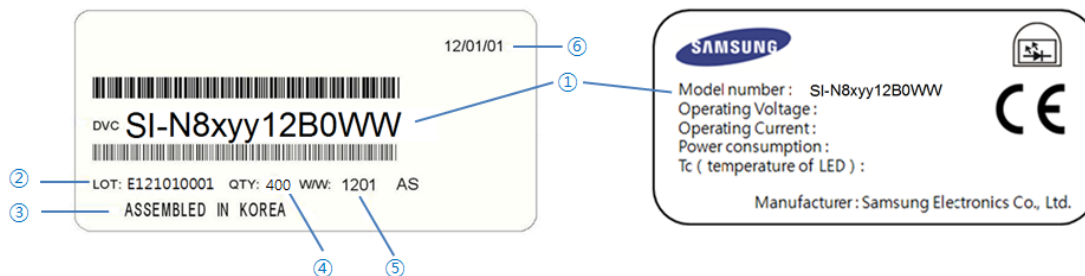
Number	Item	SLE-013, SLE-026, SLE-33, SLE-040
①	Model Number (Product Code)	Refer to page 3
②	Lot No.	-
③	CCT, LED Maker, Group No.	-

b) Module Label #2



Number	Item	SLE-013	SLE-026	SLE-033	SLE-040
①	P max	12.8 W	25.6 W	33.7 W	36.5 W
②	I max	350 mA	700mA	900mA	1000 mA
③	t_c	100 °C	100 °C	100 °C	100 °C

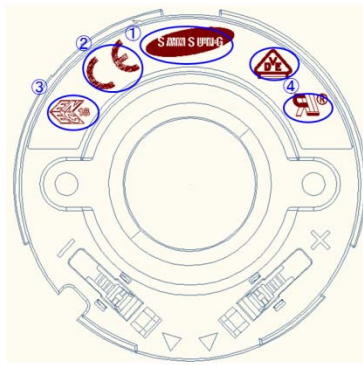
c) Box Labels



Number	Item	SLE-013, SLE-026, SLE-033, SLE-040
①	Model Number (Product Code)	Refer to page 3
②	Lot No.	-
③	Country of Origin	ASSEMBLED IN KOREA
④	Packing Quantity	400
⑤	Product Date (year & week)	yyww
⑥	Product Date (year/month/date)	yy/mm/dd



d) Certification Labels & Logo

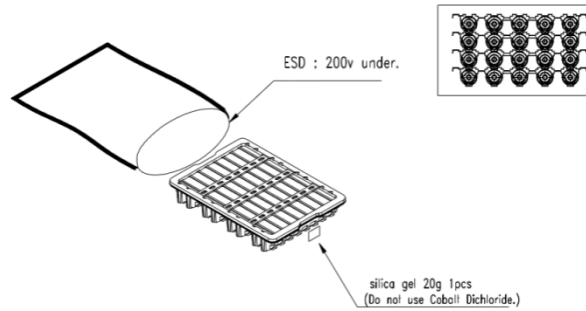


Number	Item	Remark
①	Samsung logo	-
②	CE Certificate mark	-
③	ENEC Certificate mark	-
④	VDE, UL Certificate marks	-

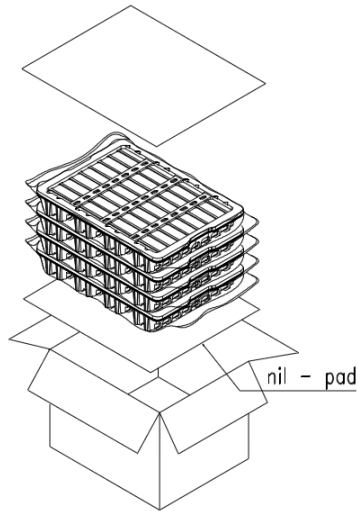
6. Packing Structure

Packing Process

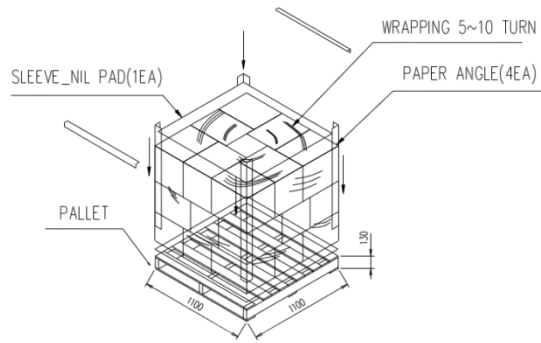
Step 1



Step 2



Step 3



Packing	Quantity (modules)	Dimension (mm)			
		Length	Width	Height	Tolerance
Tray	100	420	300	59	±2
Outer Box	400 (4 trays)	430	310	240	±5
Pallet	9600 (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.

Legal and additional information.

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Samsung Electronics Co., Ltd.
95, Samsung 2-ro
Giheung-gu
Yongin-si, Gyeonggi-do, 446-711
KOREA

www.samsungled.com

