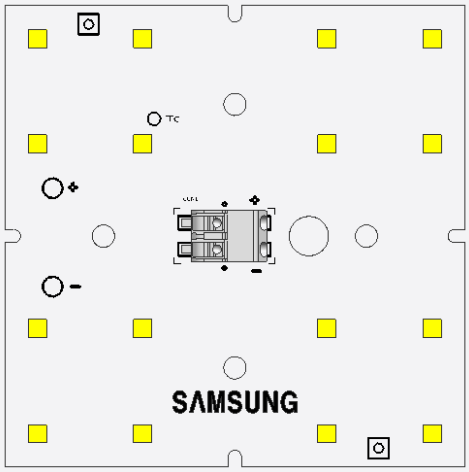
Datasheet



MODEL NAME	CCT	CODE
SC16 S2 LH231B	4000K	SL-Z7T4N90L7WW
	5000K	SL-Z7R4N90L7WW

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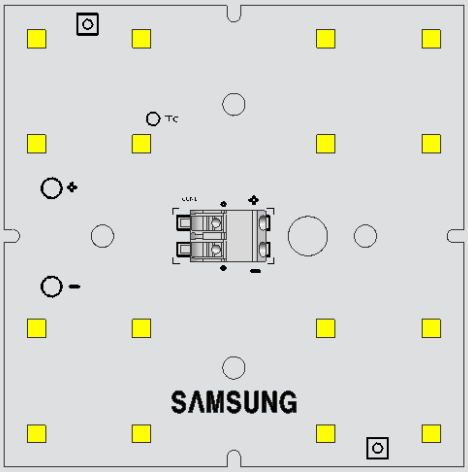
SAMSUNG

Version	Remark	Page	Date	Traced
1.0	The Preliminary Specification established.	ALL	20.04.28	I.S.LEE
2.0	Typo Corrected	ALL	20.11.12	I.S.LEE

LED Module

SC16 S2

LH231B Module



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1. Product Code Information

- SC16 S2 with LH231B

CRI	CCT	Product Code
CRI 70	4000K	SL-Z7T4N90L7WW
	5000K	SL-Z7R4N90L7WW

2. Characteristics (I_F = 2100mA , t_p = 70℃)

a) Basic Information

Item	Unit	Rating	Remark
Rated Lifetime	Hour	>50,000	L70B50
Ingress Protection (IP)	-	no rating	
Ambient / Operating Temperature (t_a)	ºC	-30 ~ +50	
Storage Temperature	ºC	-30 ~ +80	

Notes

※ I_F: Forward current or Operating current

※ t_p: temperature at which performance is specified measured at “Tc point”.

※ t_a: ambient temperature

b) Electro-Optical Characteristics

Item		Unit	Rating			Remark
			min	typ	max	
Luminous Flux	4000K	Lm	6,742	7,527	8,355	If = 2,100 mA Tp = 70 ºC
	5000K		6,742	7,527	8,355	
Luminous Efficacy	4000K	lm/W		158.2		
	5000K		-	158.2	-	
CCT	4000K	K		Mac-Adam 5 Step		Initial CCT Integrating Sphere
	5000K			Mac-Adam 7 Step		
Operating Voltage		V	20.7	22.6	25.5	
Power Consumption		W	-	47.6	-	
Color Rendering Index (Ra)		-	70			
Operating Current		mA		2,100	2,800	

Notes:
1) *tp* : temperature at which performance is specified ; measured at "T_C point"
2) Samsung maintains a measurement tolerance of
: Luminous flux ±7%, Ra ±3.0, Voltage ±5%, Current = ±5%, CCT = ±5%, CIE = ±0.005.

c) Light Distribution

Item	Unit	Nominal	Tolerance	Remark
Beam Angle (FWHM)	°(degree)	120	± 5	

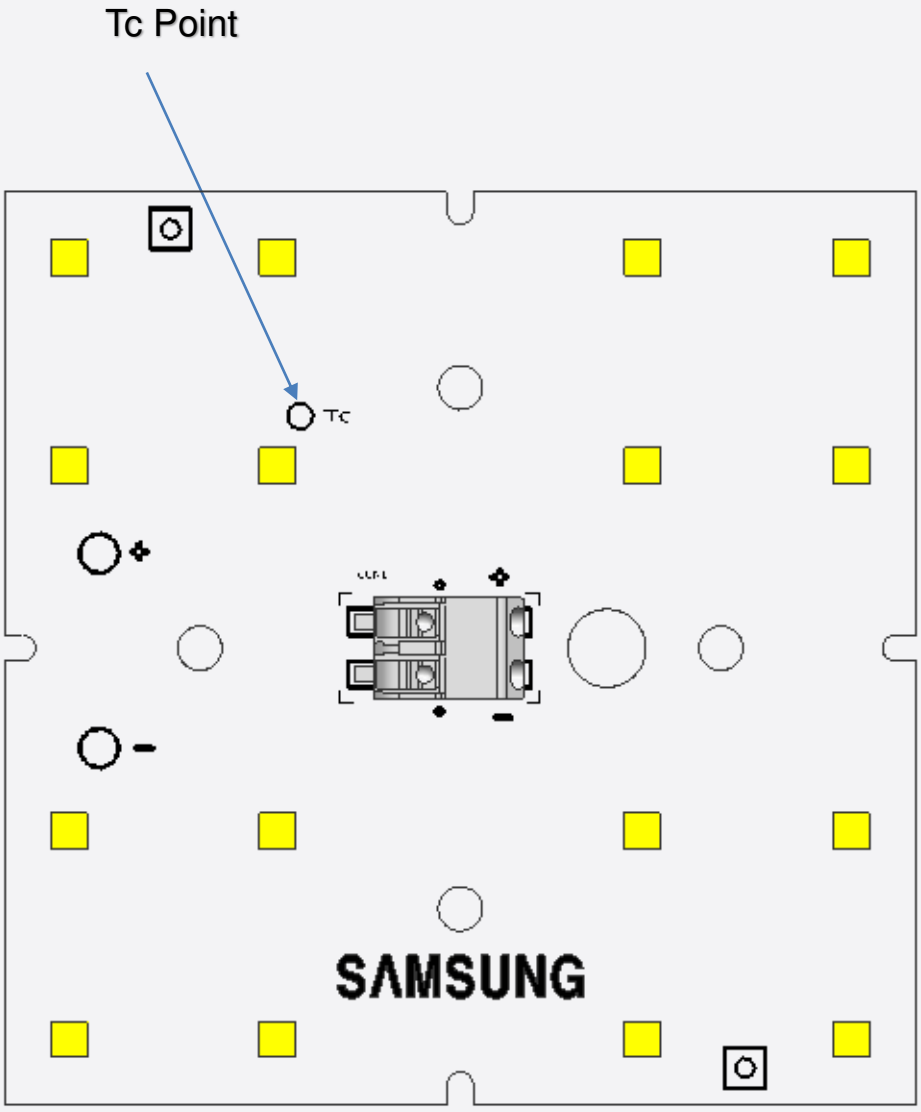
d) Temperature Characteristics

Item	Unit	Nominal*(t_p)	Life**(t_L)	Max***(t_c)
Temperature Case (Tc)	℃	70	105	110

Notes:
* Temperature used to specify performance of the module (t_p).
** Rated maximum performance temperature at which lifetime is specified in L70B50 (t_L).
*** 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).

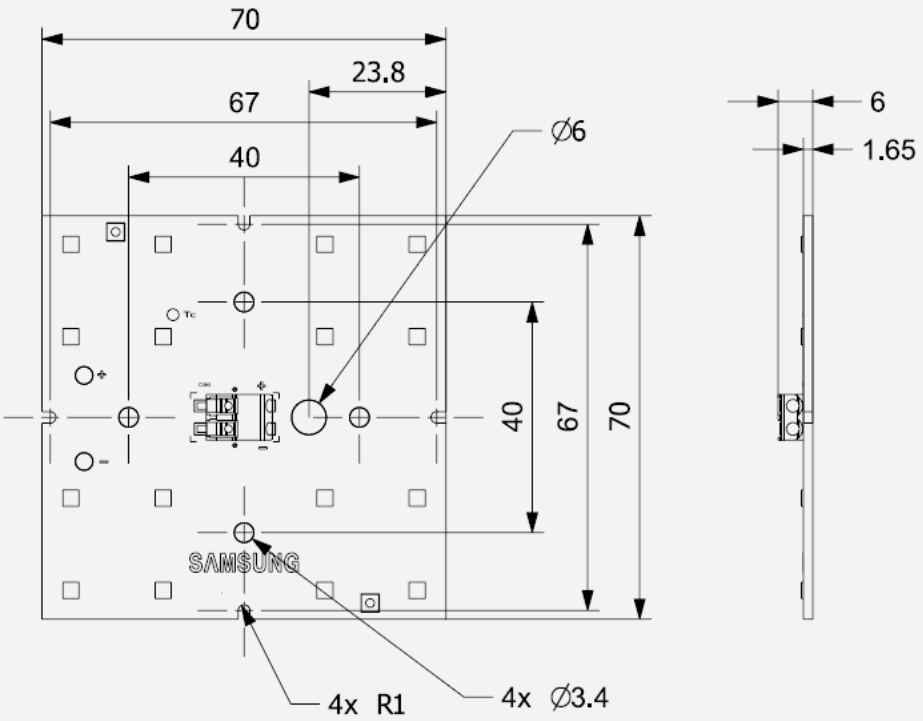
f) Thermal Measurement

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



3. Appearance and Structure

a) Appearance and Dimension



Item	Unit	Dimension	Tolerance
Module Size	mm	70 x 70	± 0.2
Module Height	mm	6.0	± 0.5
Module Weight	g	24.1	± 3.0

b) Structure

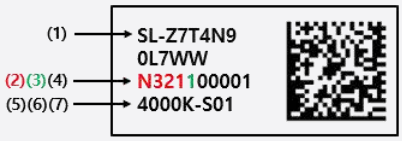
Item	Specification
LED	LH231B
Connector	WAGO 2060-452
PCB	MCPCB 1.65T, Cu 1oz, 2Px8S, 1-layer

4. Certification and Declaration

Item	Compliant to	Remark
Declaration	RoHS	Hazardous Substance & Material
UL	UL 8750	E344519

5. Label Structure

a) Module Label



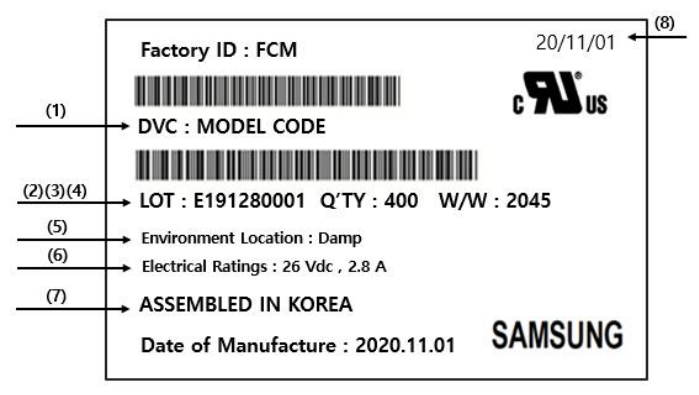
Number	Item	Remark
1	Samsung Product Code	Refer to page 1
2	SMT Date	YMDD
3	SMT Line No	1~E
4	Serial No	00001~99999
5	CCT	4000K / 5000K
6	LED Maker	-S(Samsung)
7	Group No	-

b) Tray Label

- 100mm x 50mm

Number	Item	Remark
1	Model Code	Refer to page 1
2	LOT ID	
3	Quantity	40
4	Production Date (year & week)	
5	Country of Origin	KOREA
6	Production Date (year / month / date)	-

c) Box Labels



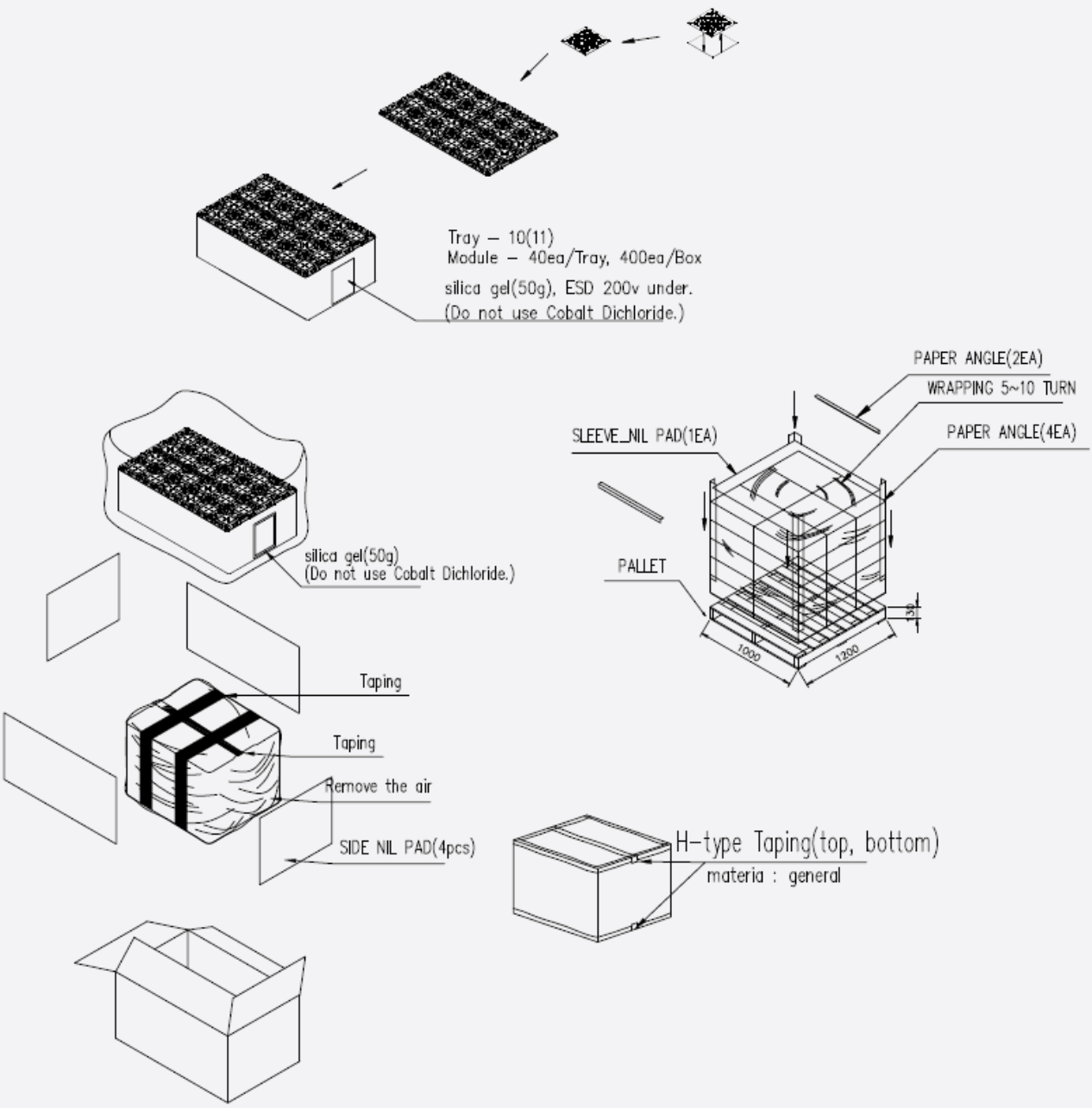
Number	Item	Remark
1	Model Number (Product Code)	Refer to page 1
2	Lot No.	-
3	Packing Quantity	400
4	Production Date (year & week)	-
5	UL Cert. (Environment Location)	Damp
6	UL Cert. (Electrical Ratings)	26Vdc , 2.8A
7	Country of Origin	KOREA
8	Production Date (year / month / date)	-

6. Packing Structure

a) Quantity and Size

Product	Packing	Quantity (ea)	Weight (kg)	Remark
SL-Z7T4N90L7WW SL-Z7R4N90L7WW	Tray	40	13	Weight (includes Modules, Trays and a Box)
	Box	400		
	Pallet	12,000		

b) Packing Pattern



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.

Appendixl. Forward Current Characteristics

Item	Unit	Forward Current	CCT	typ. Rating
Luminous Flux	lm	700mA	4000K	2710
			5000K	2710
		1,400mA	4000K	5200
			5000K	5200
Operating Voltage	V	700mA	4000K	21.2
			5000K	
		1,400mA	4000K	22.0
			5000K	
Luminous Efficacy	lm/W	700mA	4000K	182.1
			5000K	182.1
		1,400mA	4000K	169.1
			5000K	169.1

Legal and additional information.

About Samsung Electronics Co., Ltd.

Samsung inspires the world and shapes the future with transformative ideas and technologies. The company is redefining the worlds of TVs, smartphones, wearable devices, tablets, digital appliances, network systems, and semiconductor and LED solutions. For the latest news, please visit the Samsung Newsroom at news.samsung.com

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