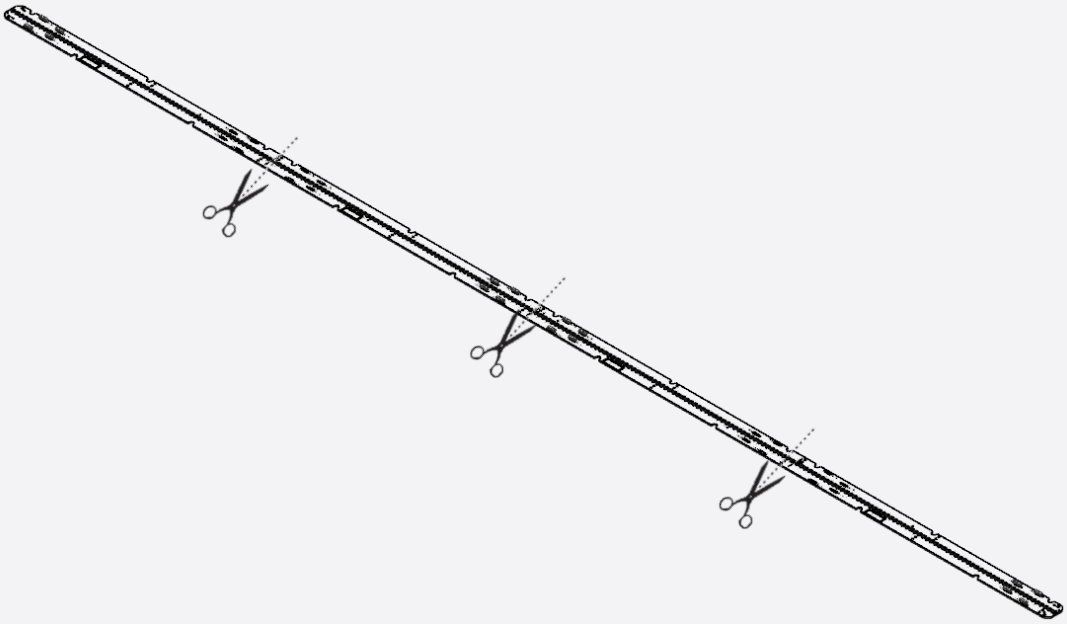
Datasheet



SAMSUNG				CUSTOMER
DEVELOP.	PRODUCT MANAGER	QA(DQA)	SALES	

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Version	Remark	Page	Date	Traced
0.0	The Preliminary Specification established.	ALL	24.02.22	S.A.JOO
0.1	Max. Operation Current Changed	2, 3	24.03.12	S.A.JOO
1.0	The first Specification established	ALL	24.05.13	S.A.JOO
2.0	The Correction of Typo	ALL	24.05.31	S.A.JOO

LED Module

44″ K Series TUWH

Features & Benefits

- Cuttable feature for better SKU management and design flexibility
- CCT Tunable White Module from 2700K to 6500K.
- 2835 Pro of high degree of reliability & long lifetime
- High efficacy up to 187.5 lm/W

Applications

- Office, Building, Education
- Troffer, Linear, Line
- Highbay/Lowbay for warehouse, plant, high ceiling etc

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1. Product Code Information

Board Option	CRI	Nominal CCT (K)	Product Code
256LED-Board	80	2700K + 6500K	SL-B8W2T70LXWW
		3500K + 5000K	SL-B8U2T70LXWW
	90	2700K + 6500K	SL-B9W2T70LXWW

2. Characteristics (Rated Current, t_c = 25℃)

a) Basic Information

Item	Unit	Rating	Remark
Rated Lifetime	hour	>50,000	L70B10 @ t_c≤80ºC, Rated current
Ingress Protection (IP)	-	no rating	
Ambient / Operating Temperature (t_a)	ºC	-40 ~ +65	
Storage Temperature	ºC	-40 ~ +85	
Isolation Breakdown Voltage	Vac	Min. 500	

Notes

※ Rated Lifetime is calculated based on theoretical TM-21 calculations.

※ I_F: Forward current or Operating current

※ t_c: Case temperature at “Tc point”.

※ t_a: ambient temperature

b) Electro-Optical Characteristics

① CRI 80 2700K + 6500K Board

Item	Nom. CCT (K)	Unit	Rating			Remark
			Min	Typ.	Max	
Luminous Flux	2700	lm	3777	4197	4616	I_f = 520mA/Ch. t_c = 25ºC
	6500		4058	4510	4961	
Luminous Efficacy	2700	lm/W	-	184.3	-	
	6500		-	198.0	-	
Color Rendering Index (Ra)	-	-	80	-	-	-
Operating Current (I_f)	-	mA	80	520	2000	Per Channel Total current/Module ≤ 2000mA
Operating Voltage (V_f)	-	Vdc	40.7 V	43.8 V	46.9 V	I_f = 520mA/Ch. t_c = 25ºC
Power Consumption	-	W		22.8		

② CRI 80 3500K + 5000K Board

Item	Nom. CCT (K)	Unit	Rating			Remark
			Min	Typ.	Max	
Luminous Flux	3500	lm	3829	4255	4680	I_f = 504mA/Ch. t_c = 25ºC
	5000		3994	4437	4881	
Luminous Efficacy	3500	lm/W	-	193.0	-	
	5000		-	201.3	-	
Color Rendering Index (Ra)	-	-	80	-	-	-
Operating Current (I_f)	-	mA	80	504	2000	Per Channel Total current/Module ≤ 2000mA
Operating Voltage (V_f)	-	Vdc	40.7 V	43.7 V	46.8 V	I_f = 504mA/Ch. t_c = 25ºC
Power Consumption	-	W		22.1		

③ CRI 90 2700K + 6500K Board

Item	Nom. CCT (K)	Unit	Rating			Remark
			Min	Typ.	Max	
Luminous Flux	2700	lm	3213 lm	3570 lm	3927 lm	I_f = 520mA/Ch. t_c = 25ºC
	6500		3552 lm	3946 lm	4341 lm	
Luminous Efficacy	2700	lm/W	-	156.8	-	
	6500		-	173.3	-	
Color Rendering Index (Ra)	-	-	90	-	-	-
Operating Current (I_f)	-	mA	80	520	2000	Per Channel Total current/Module ≤ 2000mA
Operating Voltage (V_f)	-	Vdc	40.7 V	43.8 V	46.9 V	I_f = 520mA/Ch. t_c = 25ºC
Power Consumption	-	W		22.8		

Notes

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

※ Samsung maintains a measurement tolerance of Luminous flux ±7%, Ra ±3.0, Voltage ±5%, Power Consumption: ±0.3W

c) Color Coordinate

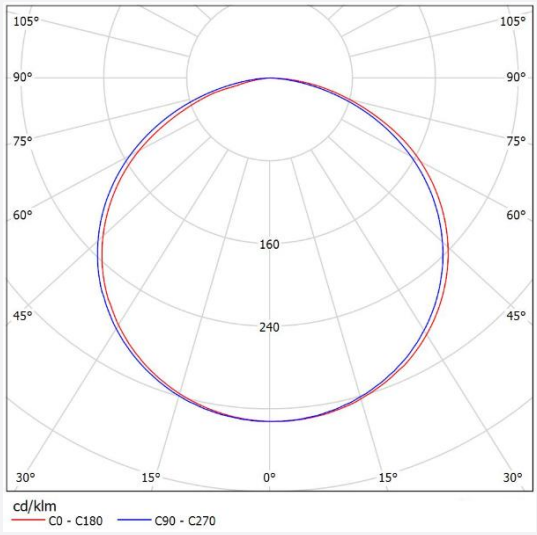
Model	Nom. CCT (K)	Unit	Color Correlated Temperature			Remark
			min	typ	max	
44″ TUWH 2700K + 6500K	2700	K	2580	2725	2870	@LED sorting condition
	6500		6020	6530	7040	
44″ TUWH 3500K + 5000K	3500	K	3220	3465	3710	
	5000		4745	5029	5312	
Color Consistency(initial)	-	Step	-	3	-	

Notes

※ Samsung maintains a measurement tolerance of CCT ± 5%

d) Light Distribution

Item	Unit	Nominal	Tolerance	Remark
Beam Angle (FWHM)	˚(degree)	118	± 5	



e) Temperature Characteristics

Item	Unit	Nominal(t_p)*	Life(t_L)**	Max(t_c)***
Case Temperature (t_c)	ºC	50	80	90

Notes:

* Nominal value at which typical performance is specified

** Value at which rated lifetime is specified

*** Maximum value, highest permissible temperature to avoid safety risk

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

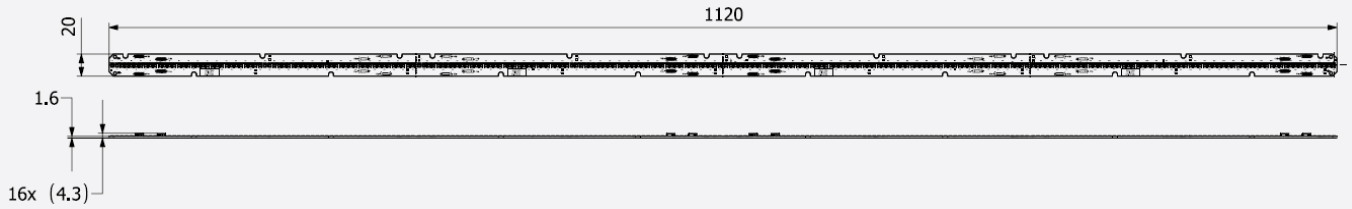
Please use heat-sink(or heat dissipation solution) with proper thermal capacity(operating wattage).

f) Thermal Measurement

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

3. Appearance and Structure

a) Appearance & Dimension



Dimension	Specification	Tolerance	Unit
Module Length	1120.0	±0.5	mm
Module Width	20.0	±0.2	mm
Module Height	4.3	Ref.	mm
PCB Thickness	1.6	±0.16	mm
Module Weight	84	Ref.	g

b) Structure

Item	Specification
LED	LM281B+ Pro Middle Power LED 2700K + 6500K board : 2700K / 6500K 128LEDs each 3500K + 5000K board : 3500K / 5000K 128LEDs each
PCB	CEM-3 PCB
Connector	1pin poke-in type

c) Schematic Circuit

- 16S x 8P, 128LEDs for each CCT

d) Handling Guide

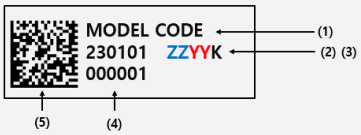
* Please use antistatic gloves or other ESD protection methods when handling this cuttable board to prevent ESD damage or contamination of LEDs.
* Customers should use proper tools and not use hands when they separate this cuttable board. It is not allowed to bend PCB and touch LED.
* Please be thoughful of securing withstanding voltage spec in case of cutting this board.
* If customers don't follow above guideline regarding handling, we won't be responsible for any quality issue.
* It is necessary to use after insulation work when exposed to insulating layer on PCB section.

4. Certification and Declaration

Item	Compliant to	Remark
Certification	UL / cUL	File no. E344519
Declaration	RoHS	Hazardous Substance & Material

5. Label Structure

a) Module Label (16 X 5 mm)



Number	Item	Remark
①	Model code	Refer to page 1
②	Date of manufacture	YYMMDD
③	Color temperature	ZZYY = 2765 or 3550
④	Series number	000001~999999; Setting "000001" every working day
⑤	QR code	SL-B8W2T70LXWW YYMMDD ZZYYK 000001

※ Module Label attachment point (2ea/bar)

b) Tray & MBB Bag Label

Number	Item	Remark
①	Model Code	Refer to page 1
②	LOT ID	
③	Quantity	Refer to page 10
④	Production Date (year & week)	
⑤	Country of Origin	MEXICO
⑥	Production Date (year / month / date)	

c) Box Label

Number	Item	Remark
①	Model Number (Product Code)	Refer to page 1
②	Lot No.	
③	Packing Quantity	Refer to page 10
④	Production Date (year & week)	
⑤	UL Cert. (Environment Location)	Damp
⑥	UL Cert. (Electrical Ratings)	46.9 Vdc / 1.6 A
⑦	Country of Origin	MEXICO
⑧	Production Date (year / month / date)	
⑨	Input supply limitations	Class 2 input only

6. Packing Structure

Product	Packing	Quantity (modules)	Weight	Dimension (mm)		
				Length	Width	Height
44″ TUWH	Tray	20 ea	14.23kg	1175	375	24
	Outer Box	120 ea		1185	385	130
	Pallet	1440 ea	186	1200	800	1015

Notes

※ Weight includes Modules, Trays and a Box.

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.

11) Solder ball

There might be solder ball and/or residue on the surface of module as long as they do NOT affect performance and safety.

12) When you install products in fixture, you should not connect the product while it is powered on. It will cause damage Circuits(that LED is included) and result in emitting smoke and ignition.

[Appendix]

1. Applicable Solid Wire Information

a) Strip details

Connection method	Poke In
Solid Conductor	0.2-0.75mm^2 / 24-18 AWG
Strip length	8.5±1mm
Conductor entry angle to the PCB	0 °

b) Important processing notes

Depending on the SMD soldering process and associated parameters a minor discoloration might occur.
However, this will not influence the functionality.

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 memory, system LSI, foundry and LED solutions. For the latest news, please visit the Samsung Newsroom at news.samsung.com.

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