

# Datasheet



MODEL NAME	CRI	Item	SEC CODE
Standard Horticulture Gen2	80	4000K+RED	SI-B8T502560WW

SAMSUNG				CUSTOMER
DEVELOP.	PRODUCT PLANNING	QA(DQA)	SALES	

SAMSUNG ELECTRONICS CO.,LTD.  
 1 Samsung-ro , Giheung-gu ,  
 Yongin-si , Gyeonggi-do 17113 , KOREA



LED Module

# Standard Horticulture Gen2



## Table of Contents

1.	Product Code Information	-----	3
2.	Characteristics	-----	4
3.	Structure and Assembly	-----	7
4.	Certification and Declaration	-----	8
5.	Label Structure	-----	9
6.	Packing Structure	-----	11
7.	Precautions in Handling & Use	-----	12
Appendix			
1.	Applicable Solid Wires	-----	14
2.	Spectral Power Distribution	-----	15
3.	Connection	-----	16
4.	Conformal coating	-----	16

## 1. Product Code Information

Item	Product Code
4000K+RED	SI-B8T502560WW

---

## 2. Characteristics ( $I_F=1200\text{mA}$ , $t_p=25^\circ\text{C}$ )

### a) Basic Information

Item	Unit	Rating	Remark
Rated Lifetime	Hour	>50,000	L70B50 @ $t_p < 65^\circ\text{C}$ , $I_F = 1200\text{mA}$
Ingress Protection (IP)	-	no rating	
Ambient / Operating Temperature ( $t_a$ )	$^\circ\text{C}$	-20 ~ +50	
Storage Temperature	$^\circ\text{C}$	-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 ( $\Phi_v$ )	lm	8150	8960	-	$I_F = 1200\text{ mA}$ $t_p = 25^\circ\text{C}$
Luminous Efficacy	lm/W	-	178	-	
Color Rendering Index (Ra)	-	80			-
Operating Current ( $I_i$ )	mA	-	1200	1600	-
Operating Voltage ( $V_i$ )	Vdc	39.5	42.0	45.0	
Power Consumption	W	47.4	50.4	54.0	$I_F = 1200\text{ mA}$ $t_p = 25^\circ\text{C}$
PPF	umol/s		150		
PPE	umol/J		2.98		

#### Notes:

- ※  $t_p$ : temperature at which performance is specified; measured at "Tc point".
- ※ Samsung maintains a measurement tolerance of : Luminous flux:  $\pm 7\%$ , CRI:  $\pm 3.0$ , Voltage:  $\pm 5\%$

### c) Color Correlated Temperature

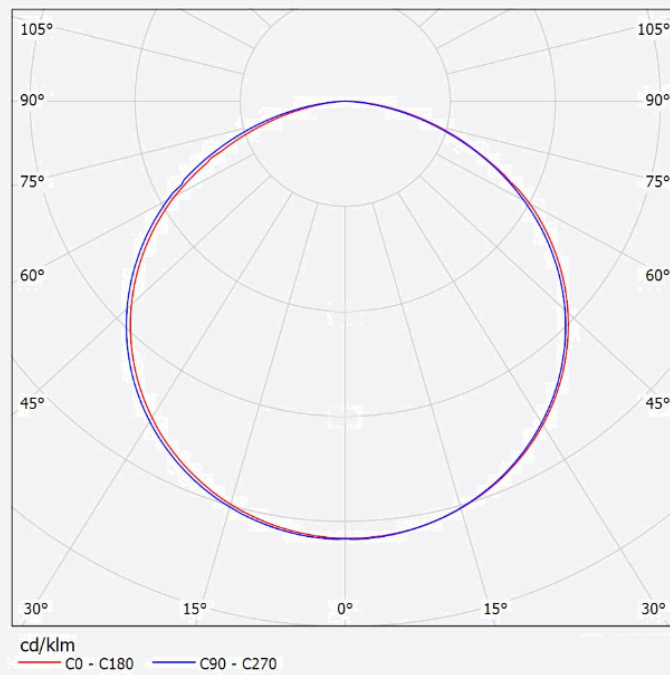
Model code	Unit	Color Correlated Temperature			Remark
		Min	Typ.	Max	
SI-B8T502560WW	K	3070	3350	3645	$I_F = 1200\text{mA}$ $t_p = 25^\circ\text{C}$

#### Notes

※ Samsung maintains a measurement tolerance of CCT  $\pm 5\%$

### d) Light Distribution

Item	Unit	Nominal	Tolerance	Remark
Beam Angle (FWHM)	°(degree)	118	$\pm 5$	



## e) Temperature Characteristics

Item	Unit	Nominal*( $t_p$ )	Life**( $t_L$ )	Max***( $t_c$ )
Temperature Case (Tc)	°C	25	65	95

### 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. (See page 6)

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

## f) Thermal Measurement

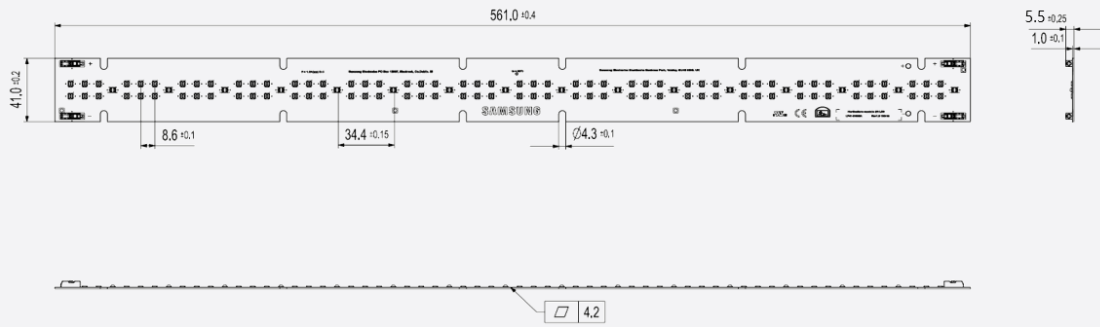
Performance temperatures are measured on "Tc point" as indicated on the module.





### 3. Appearance and Structure

#### a) Appearance and Dimension



Dimension	Unit	Specification	Tolerance
Module Length	mm	561.0	± 0.4
Module Width	mm	41.0	± 0.2
Module Height	mm	5.5	± 0.25
PCB Thickness	mm	1.0	± 0.1
Module Weight	g	66.6	± 3.33


#### b) Structure

Item	Specification
LED	LM301H EVO Middle Power LED LH351H High Power Red LED
PCB	MCPCB, White PSR, Cu 1oz, Single layer
Connector	Wago 2060-451 (24~18 AWG ; terminal strip length of 7.0~9.0 mm) (Appendix 1)
Conformal Coating	Solventless, transparent conformal coating

#### c) Schematic Circuit

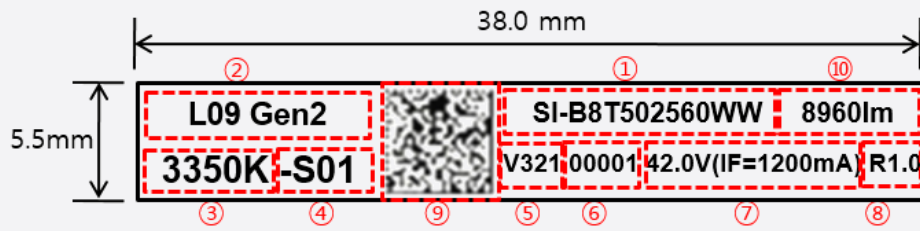
- 3030 LED : 12S x 8P
- Red LED : 4S x 4P

## 4. Certification and Declaration

Item	Compliant to	Remark
Test & Certification	UL / cUL	E344519
	CE	IEC / EN 62031, IEC / EN 62471
	Eye Protection(Photo-biological Safety)	Risk group 1
	Type Classification	Built-in module 
Declaration	RoHS	Hazardous Substance & Material
	REACH	Hazardous Substance & Material

## 5. Label Structure

### a) Module Label



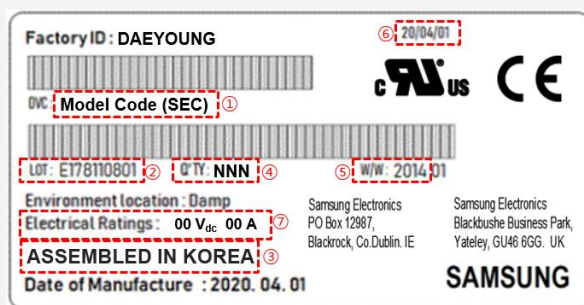
Number	Item	Remark
①	Model code	Refer to page 3
②	Product name	-
③	Color temperature	3350K
④	LED maker & Bin rank	-S (Samsung) 00~ZZ
⑤	SMT date	V321 (2021-March-21th)
⑥	Serial No.	00001~99999; Setting "00001" every working day
⑦	Voltage (IF).	-
⑧	Product Revision	-
⑨	2D Matrix	SI-B8T502560WW V3211000013350K-S01
⑩	Lumen	8960lm

## b) Tray &amp; MBB bag Label



Number	Item	Remark
①	Model Code	Refer to page 3
②	LOT ID	
③	Quantity	Refer to page 11
④	Date of production	
⑤	Date of Issue	

## c) Box Label



Number	Item	Remark
①	Model Code	Refer to page 3
②	LOT ID	
③	Place of origin	
④	Quantity	Refer to page 11
⑤	Describe production week	
⑥	Date of Issue	
⑦	Electrical Ratings	47.9Vdc, 1.6A

## 6. Packing Structure

### a) Quantity

Product	Packing	Quantity (ea)	Weight (kg)	Remark
Standard Horticulture Gen2	Tray	30	12.3	Weight (includes Modules, Trays and a Box)
	Outer Box	120		
	Pallet	1920	-	

## 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) Please use this product within 5 months, which is kept in its original packaging unopened when stocked

# 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](https://news.samsung.com)

Copyright © 2019 Samsung Electronics Co., Ltd. All rights reserved.

Samsung Electronics reserves the right to modify, at its sole discretion, the design, packaging, specifications, and features shown herein without notice at any time.

Samsung Electronics Co., Ltd.  
1, Samsung-ro, Giheung-gu,  
Yongin-si, Gyeonggi-do, 17113  
KOREA  
[www.samsung.com/led/](https://www.samsung.com/led/)

# Appendix

## 1. Applicable Solid Wires

### a) Strip details

Wiring method	Push In
Cross section [solid]	0.2-0.75mm <sup>2</sup>
Cross Section [AWG]	24-18
Strip length	8.0 ±1mm
Conductor entry angle to the PCB	0 °

※ outside insulation diameter Φ2.1mm Max.

### b) Material details

Temperature stability	-40°C ~ +105°C
Flammability category, based on UL94	V0
Insulating material group	I
Insulating material	PPA-GF

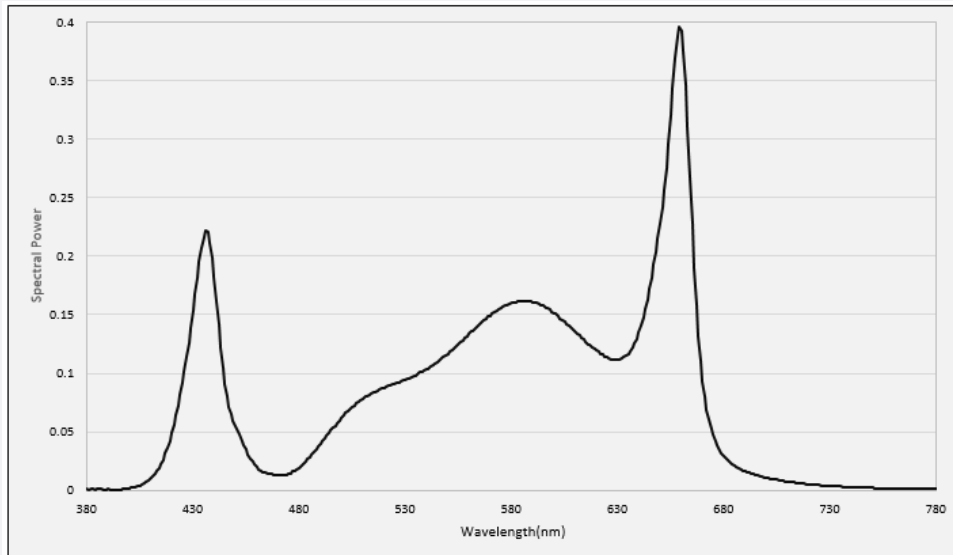
### c) Important processing notes

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



# Appendix

## 2. Spectral Power Distribution ( $I_F = 1200\text{mA}$ , $t_p = 25^\circ\text{C}$ )



### Notes

- ※ Spectrum distribution is normalized based on actual measurement as a representative and products could have a difference with above.

# Appendix

## 3. Connection

Product	Max parallel	Max series	Remark
Horticulture Gen2	2 bar	4 bar	Operating current / module = 1.2A

## 4. Conformal coating



### Notes

- ※ Conformal coating process is applied around LED lead frames and appearance could look different with above picture