Datasheet

MODEL NAME	CRI	CCT	SEC CODE
V Series Gen3 TUWH VB22F Ver	80	3500+5000K	SI-B8F301B20WW
V Series Gen3 TUWH VB24F Ver	80	3500+5000K	SI-B8F601B20WW

SAMSUNG				CUSTOMER
DEVELOP.	PRODUCT MANAGER	QA(DQA)	SALES	

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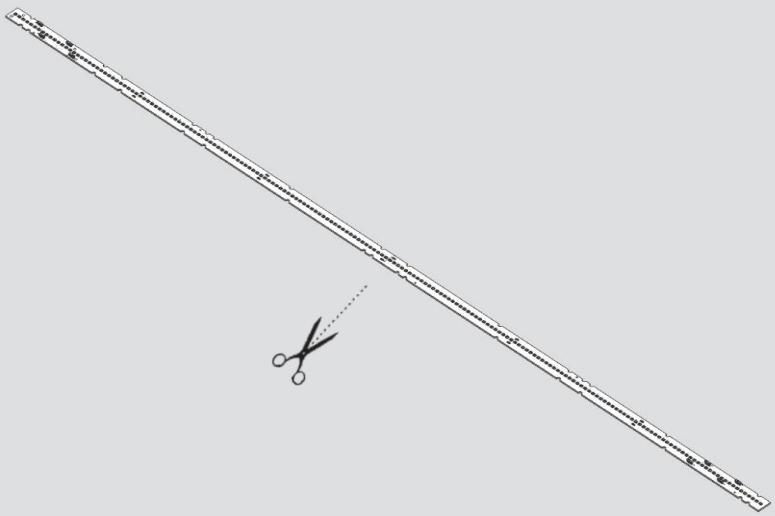
Rev	Remark	Page	Date	Traced
0.0	The First Specification established.	ALL	22.11.25.	HJ Kim
1.0	The Specification updated.	ALL	23.01.12.	JK Lee

LED Module

V Series Gen3 TUWH Ver.



Features & Benefits

- Design flexibility for module length by cuttable design
- 2835 Pro of high degree of reliability & long lifetime
- Two variations of 5000/10000lm
- High efficacy up to 173 lm/W

Application

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

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Table of Contents

1. Product Code Information

a) VB22F

Nominal CCT (K)	Product Code
3500K+5000K	SI-B8F301B20WW

b) VB24F

Nominal CCT (K)	Product Code
3500K+5000K	SI-B8F601B20WW

2. Characteristics

a) Basic Information

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

Notes:

※ I_F: Forward current or Operating current

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

※ t_a: ambient temperature

b) Electro-Optical Characteristics

- VB22F

Item	Nom. CCT (K)	Rating			Unit	Remark
		Min	Typ.	Max		
Luminous Flux	3500	4600	5020	5520	lm	I_f = 650mA t_p = 50ºC
	5000	4590	5070	5570		
Luminous Efficacy	3500	158	173	190	lm/W	
	5000	157	173	190		
Color Rendering Index (Ra)	-	80	-	-	-	-
Operating Current (I_f)	-	60	650	1200	mA	-
Operating Voltage (V_f)	3500	42.1	44.7	46.7	Vdc	I_f = 650mA t_p = 50ºC
	5000	43.5	45.1	47.7		
Power Consumption	3500	27.4	29.1	30.4	W	
	5000	28.3	29.3	31.0		

- VB24F

Item	Nom. CCT (K)	Rating			Unit	Remark
		Min	Typ.	Max		
Luminous Flux	3500	9210	10050	11050	lm	I_f = 1300mA t_p = 50ºC
	5000	9200	10140	11150		
Luminous Efficacy	3500	158	173	190	lm/W	
	5000	157	173	190		
Color Rendering Index (Ra)	-	80		-	-	-
Operating Current (I_f)	-	120	1300	1800	mA	-
Operating Voltage (V_f)	3500	42.3	44.7	47.0	Vdc	I_f = 1300mA t_p = 50ºC
	5000	43.6	45.1	47.8		
Power Consumption	3500	55.0	58.1	61.1	W	
	5000	56.7	58.6	62.1		

Notes

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

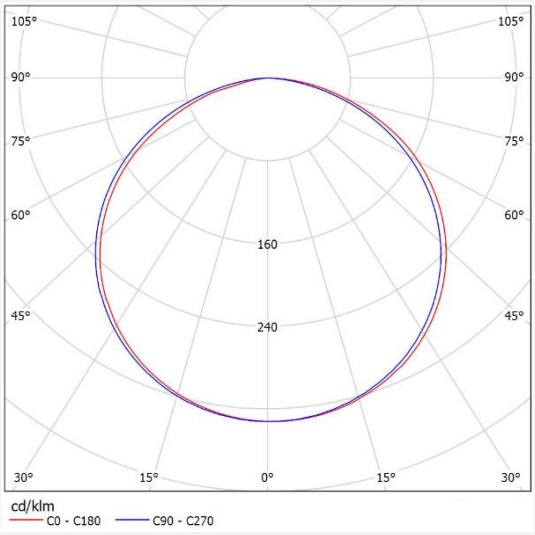
※ Samsung maintains a measurement tolerance of : Luminous flux: ±7 %, CRI: ±3.0, Voltage: ±0.3 V, Power Consumption: ±0.3W

c) Color Coordinate

Model	Nom. CCT (K)	CIE 1931 Chromaticity Coordinates					Remark
V Series Gen3 TUWH	3500	CIE x	0.3990	0.4121	0.4179	0.4044	VB22F I_F = 650 mA VB24F I_F = 1300 mA t_p = 25 ºC
		CIE y	0.3773	0.3835	0.3984	0.3918	
		Center	CIE x	0.4084	CIE y	0.3878	
	5000	CIE x	0.3406	0.3494	0.3506	0.3415	
		CIE y	0.3416	0.3486	0.3615	0.3541	
		Center	CIE x	0.3455	CIE y	0.3515	

d) Light Distribution

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



e) Temperature Characteristics

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

Notes

* Temperature used to specify performance of the module (t_p).

** Rated maximum performance temperature at which lifetime is specified in L70B10 (t_L).

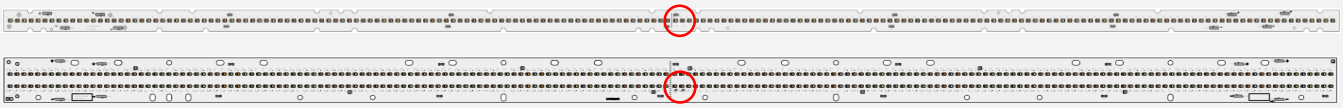
*** Rated maximum temperature, highest permissible temperature to avoid safety risk (t_c).

All temperatures are measured at the designated “Tc” 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

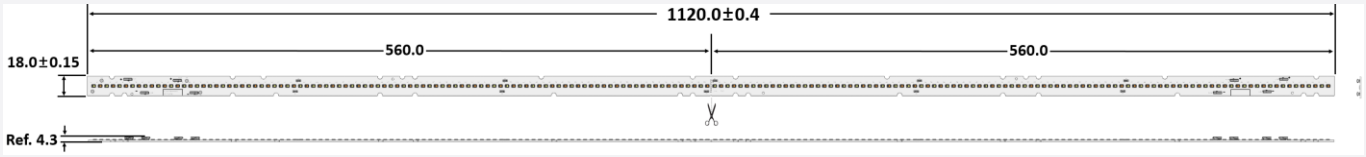
Performance temperatures are measured on “Tc” as indicated on the module.



3. Structure and Assembly

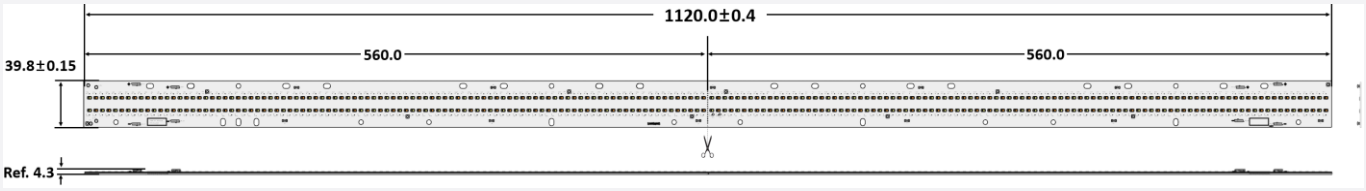
a) Appearance & Dimension

- VB22F



Dimension	Specification	Tolerance	Unit
Module Length	1120.0	±0.4	mm
Module Width	18.0	±0.15	mm
Module Height	4.3	Ref.	mm
PCB Thickness	1.6	±0.16	mm
Module Weight	68.5	Ref.	g

- VB24F



Dimension	Specification	Tolerance	Unit
Module Length	1120.0	±0.4	mm
Module Width	39.8	±0.15	mm
Module Height	4.3	Ref.	mm
PCB Thickness	1.6	±0.16	mm
Module Weight	149	Ref.	g

b) Structure

Item	Specification
LED	LM281B+ Middle Power LED
PCB	CEM-3 PCB
Connector	1pin poke-in type

c) Schematic Circuit

- VB22F 16S x 6P per each CCT
- VB24F 16S x 12P per each CCT

d) Handling Guide

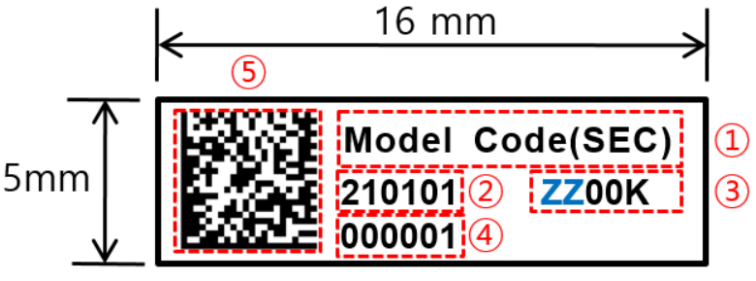
* Please use antistatic gloves or other ESD protection methods when handling this cuttable board to prevent ESD damage or contamination of LEDs.
* Customers should use proper tools and not use hands when they separate this cuttable board. It is not allowed to bend PCB and touch LED.
* Please be thoughful 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	E344519 Input Types(Input supply limitations) : Class 2
Declaration	RoHS	Hazardous Substance & Material

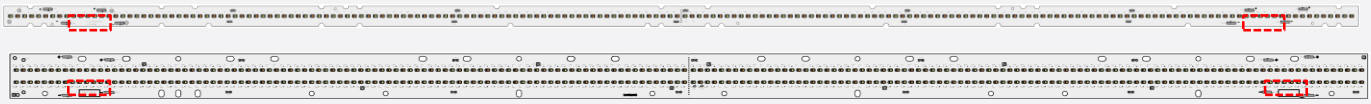
5. Label Structure

a) Module Label



Number	Item	Remark
①	Model code	Refer to page 3
②	Date of manufacture	YYMMDD
③	Color temperature	ZZ = 50
④	Series number	000001~999999; Setting "000001" every working day
⑤	QR code	VB22F : SI-B8F301B20WW YYMMDD ZZ00K 000001 VB24F : SI-B8F601B20WW YYMMDD ZZ00K 000001

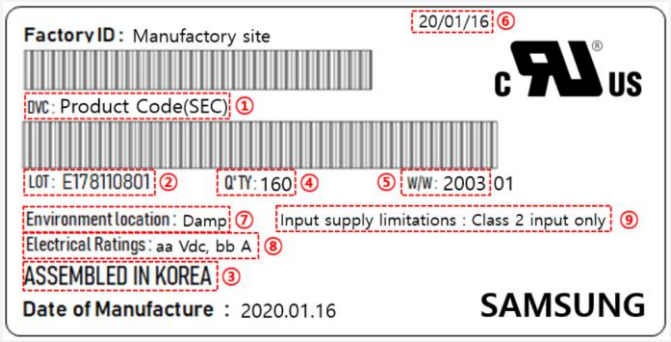
※ Module Label attachment point (2ea/bar)



b) Tray & MBB Bag Label

Number	Item	Remark
①	Model Code	Refer to page 3
②	LOT ID	
③	Quantity	Refer to page 13
④	Date of production	
⑤	Date of Issue	
⑥	Place of origin	

c) Box Label



Number	Item	Remark
①	Product Code	Refer to page 3
②	LOT ID	
③	Place of origin	
④	Quantity	Refer to page 13
⑤	Describe production week	
⑥	Date of Issue	
⑦	Environment location	Damp
⑧	Electrical Ratings (voltage/current)	VB22F: 55Vdc, 1.2A(3500K/5000K), 55Vdc, 0.6A+55Vdc, 0.6A(4000K) VB24F: 55Vdc, 1.8A(3500K/5000K), 55Vdc, 0.9A+55Vdc, 0.9A(4000K)
⑨	Input supply limitations	Class 2 input only

6. Packing Structure

Product	Packing	Quantity (modules)	Weight	Dimension (mm)		
				Length	Width	Height
VB22F	Tray	11 ea	12.5kg	1180	310	22.8
	Outer Box	88 ea		1185	315	150
	Pallet	1320 ea	-	1200	1000	130
VB24F	Tray	6 ea	13.2kg	1180	310	22
	Outer Box	48 ea		1185	315	150
	Pallet	720 ea	-	1200	1000	130

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	Push 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.

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