

LED Module

V-series

LT-VB22A



LT-VB22B



Features & Benefits

- Cost effective solution, deliver better lm/\$
- Same mechanical foot-print as existing M-series
- Good efficacy, 140 lm/W @ 4000K

Applications

Indoor Lighting:

- Troffer / Linear / Line fixtures



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1. Product Code Information

a) LT-VB22A

Nominal CCT (K)	Product Code
3000	SI-B8V221B2CUS
3500	SI-B8U221B2CUS
4000	SI-B8T221B2CUS
5000	SI-B8R221B2CUS

b) LT-VB22B

Nominal CCT (K)	Product Code
3000	SI-B8V301B2CUS
3500	SI-B8U301B2CUS
4000	SI-B8T301B2CUS
5000	SI-B8R301B2CUS

2. Characteristics

Item	Rating	Unit	Remark
Rated Lifetime	>50,000	hour	L70B50
Ingress Protection (IP)	no rating	-	
Ambient / Operating Temperature (t_{amb})	-20 ~ +50	°C	
Storage Temperature	-30 ~ +80	°C	

(a) LT-VB22A

Item	Nom. CCT (K)	Rating			Unit	Remark
		Min	Typ.	Max		
Luminous Flux (Φ_v)	3000	2426	2696	2968	lm	$I_f = 840 \text{ mA}$ $t_p = 50 \text{ }^\circ\text{C}$
	3500	2520	2800	3082		
	4000	2614	2904	3194		
	5000	2614	2904	3194		
Luminous Efficacy	3000	115	127	140	lm/W	
	3500	119	132	146		
	4000	124	137	151		
	5000	124	137	151		
CCT	3000	2980	3045	3110	K	
	3500	3360	3465	3570		
	4000	3830	3985	4130		
	5000	4810	5028	5240		
Color Consistency (initial)		-	3	-	Mac Adam step	
Color Rendering Index (Ra)		80	83	-	-	
Operating Current (I_f)		-	840	1080	mA	-
Operating Voltage (V_f)		22.68	25.2	27.72	Vdc	$I_f = 840 \text{ mA}$
Power Consumption		19.04	21.16	23.28	W	$t_p = 50 \text{ }^\circ\text{C}$

Notes:

- 1) t_p : temperature at which performance is specified; measured at “tc point”.
- 2) Samsung maintains a measurement tolerance of: Luminous flux: $\pm 5\%$, CRI: ± 2.0 , Voltage: $\pm 0.3\text{V}$, Power Consumption: $\pm 0.5\text{W}$

(b) LT-VB22B

Item	Nom. CCT (K)	Rating			Unit	Remark
		Min	Typ.	Max		
Luminous Flux (Φ_v)	3000	3681	4090	4499	lm	
	3500	3796	4218	4640		
	4000	3883	4314	4745		
	5000	3883	4314	4745		
Luminous Efficacy	3000	115	128	141	lm/W	$I_f = 1260 \text{ mA}$ $t_p = 50 \text{ }^\circ\text{C}$
	3500	119	132	145		
	4000	121	135	148		
	5000	121	135	148		
CCT	3000	2980	3045	3110	K	
	3500	3360	3465	3570		
	4000	3830	3985	4130		
	5000	4810	5028	5240		
Color Consistency (initial)		-	3	-	Mac Adam step	
Color Rendering Index (Ra)		80	83	-	-	
Operating Current (I_f)		-	1260	1440	mA	-
Operating Voltage (V_f)		22.82	25.36	27.90	Vdc	$I_f = 1260 \text{ mA}$ $t_p = 50 \text{ }^\circ\text{C}$
Power Consumption		28.75	31.96	35.15	W	$t_p = 50 \text{ }^\circ\text{C}$

Notes:

- 3) t_p : temperature at which performance is specified; measured at “tc point”.
- 4) Samsung maintains a measurement tolerance of: Luminous flux: $\pm 5\%$, CRI: ± 2.0 , Voltage: $\pm 0.3\text{V}$, Power Consumption: $\pm 0.5\text{W}$

Item	Nominal*	Life	Max**	Unit
Temperature for LT-VB22B,	50 (t_p)	70	80(t_c)	$^\circ\text{C}$

Notes:

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

3. Structure and Assembly

a) Appearance

LT-VB22A



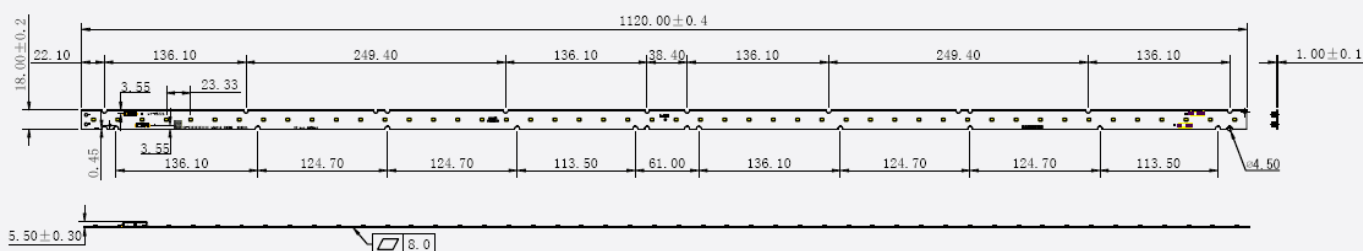
LT-VB22B



b) Dimension

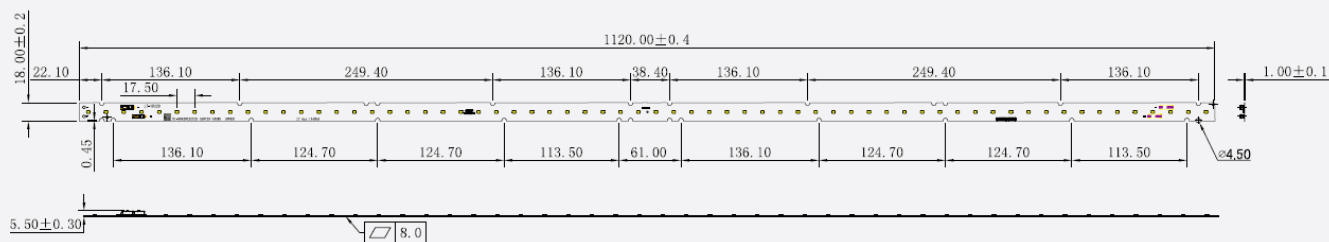
LT-VB22A

Dimension	Specification	Tolerance	Unit
Module Length	1120	±0.4	mm
Module Width	18	±0.2	mm
Module Height	5.5	±0.3	mm
PCB Thickness	1.0	±0.1	mm
Module Weight	45.15	±1.5	g



LT-VB22B

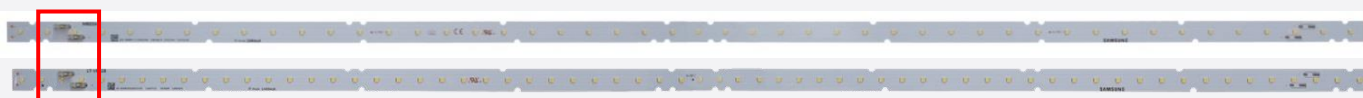
Dimension	Specification	Tolerance	Unit
Module Length	1120	±0.4	mm
Module Width	18	±0.2	mm
Module Height	5.5	±0.3	mm
PCB Thickness	1.0	±0.1	mm
Module Weight	44.25	±1.5	g



c) Assembly

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

[Front connector]

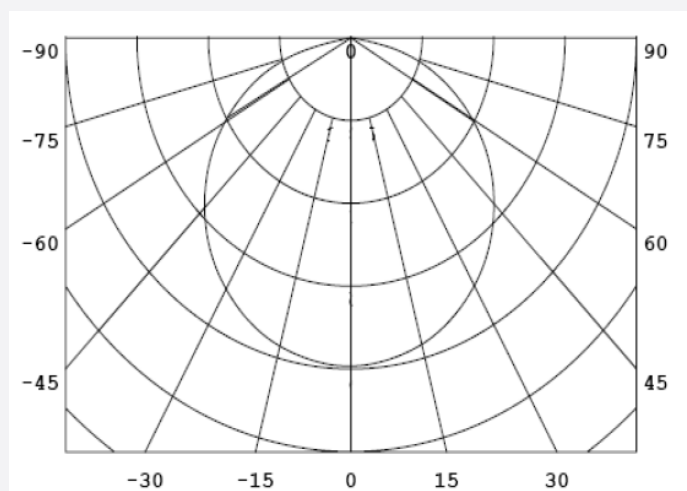


d) Structure

Item	Specification
LED	SMD2835 Middle power LED
PCB	Material: CEM-3,copperdouble layer
Connector	Reworkable poke-in connector type
Wire	18-22AWG; terminal strip length of 7.5-8.5mm

e) Light Distribution

Polar Intensity Diagram: Beam Angle $120\pm 5^{\circ}$



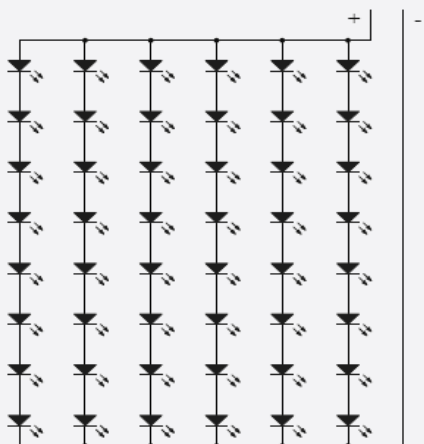
f) Thermal Management

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

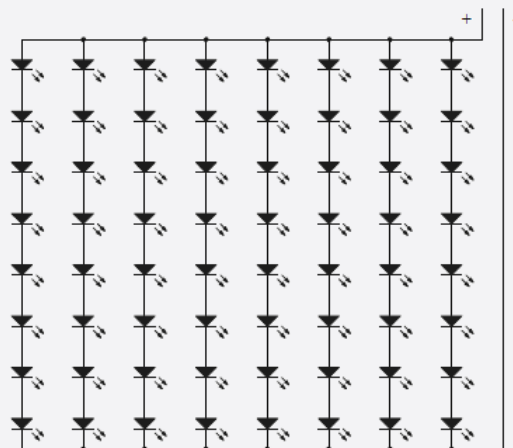


g) Schematic Circuit

LT-VB22A
8Sx6P



LT-VB22B
8Sx8P



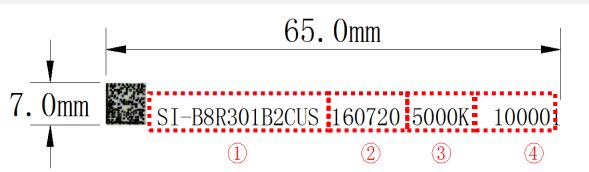
4. Certification and Declaration

Item	Compliant to	Remark
Test & Certification	CE	IEC / EN 62031, IEC / EN 62471
	ENEC	-
	VDE	-
	UL	E344519
	cUL	E344519
	Photo biological Safety(LED)	IEC / EN 62471
Declaration	RoHS	Hazardous Substance & Material
	REACH	Hazardous Substance & Material

5. Label Structure

a) Module Label

[Printing Label]



[Information of Barcode]

- ① Model code: SI-B8R221B2CUS
SI-B8R301B2CUS
R: V(3000K), U(3500K), T(4000K), R(5000K)
- ② Date of manufacture:
- ③ Color temperature:
- ④ Series number:

[QR CODE Information]

- ① Example: SI-B8R301B2CUS YYMMDD 5000K100001
- ② 34digits: Modelcode(14)+Space(1)+SMTdate(6)+Space(1)+Color temperature(5)+Space(1)+Series number(6)

ModelCODE	SI-B8R301B2CUS
QRCODE Information	SI-B8R301B2CUS YYMMDD 5000K 100001



b) Box Label

- 100mm x 50mm

Ex)



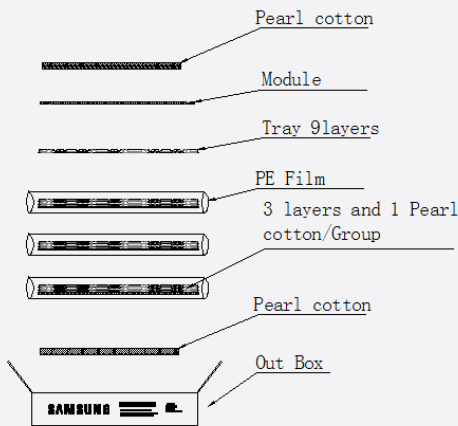
The lot number is composed of the following characters:

- ① Product code
- ② Lot ID
- ③ Place of origin
- ④ Quantity
- ⑤ Describe production week
- ⑥ Date of Issue

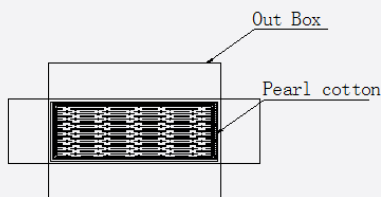
SAMSUNG

6. Packing Structure

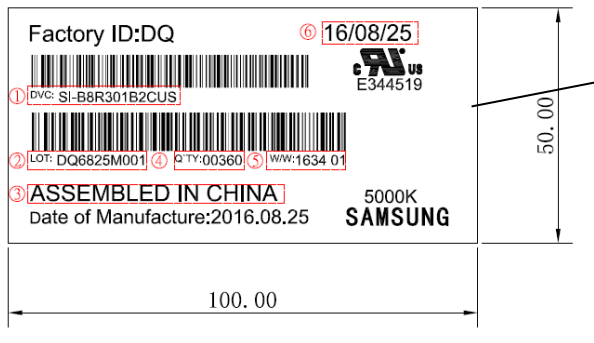
ARTICLE	TRAY	BOX	PALLET	REMARKS
Quantity	40ea	520ea	5200ea	LT-VB22B



Side View



TOP View



7. Precautions in Handling & Use

A. The LED Lighting Modules for white light are devices which are materialized by combining white LEDs.

The color of white light can differ a little unusually to diffuser plate(sign-board panel).

Also when the LEDs are illuminating, operating current should be decided after considering the ambient maximum temperature.

B. Handling

To prevent the LED Lighting Modules from making any defectives, please handle the LED Lighting Modules with care as follows.

- (1) Don't drop the unit and don't give the unit any shocks.
- (2) Don't bend the PCB and don't touch the LED Resin.
- (3) Don't storage the Module in a dusty place or room.
- (4) Don't take the product apart.
- (5) Don't touch the LED and also PCB and other circuit parts of Module with your naked fingers or sharpness things.
- (6) Take care so that do not pull wire with hand in case of carries or moves LED Lighting Modules.

C. Cleaning

The LED Lighting Modules should not be used in any type of fluid such as water, oil, organic solvent, etc.

It is recommended that IPA(Isopropyl Alcohol) be used as a solvent for cleaning the LED Lighting Modules.

When using other solvents, it should be confirmed beforehand whether the solvents will dissolve the package and the resin or not. Freon solvents should not be used to clean the LEDs because of worldwide regulations. Do not clean the LED Lighting Modules by the ultrasonic.

Before cleaning, a pre-test should be done to confirm whether any damage to the LED Lighting Modules will occur.

D. Static Electricity

Static electricity or surge voltage damages the LED Lighting Modules. Please keep the working process anti-static electricity condition to prevent the Lighting from destroying, as following.

- (1) Anyone who handles the unit should be well grounded.(earth ring or anti-static glove)
- (2) Anyone who handles the unit should wear anti-electrostatic working clothes.
- (3) All kinds of device and instruments, such as working table, measuring instruments and assembly jigs in your production lines should be well grounded.

E. Storage

The LED Lighting Modules must be stored to insert a package of a moisture absorbent material (silica gel) in a box.

F. Others

If over voltage which exceeds the absolute maximum rating is applied to LED Lighting Modules.

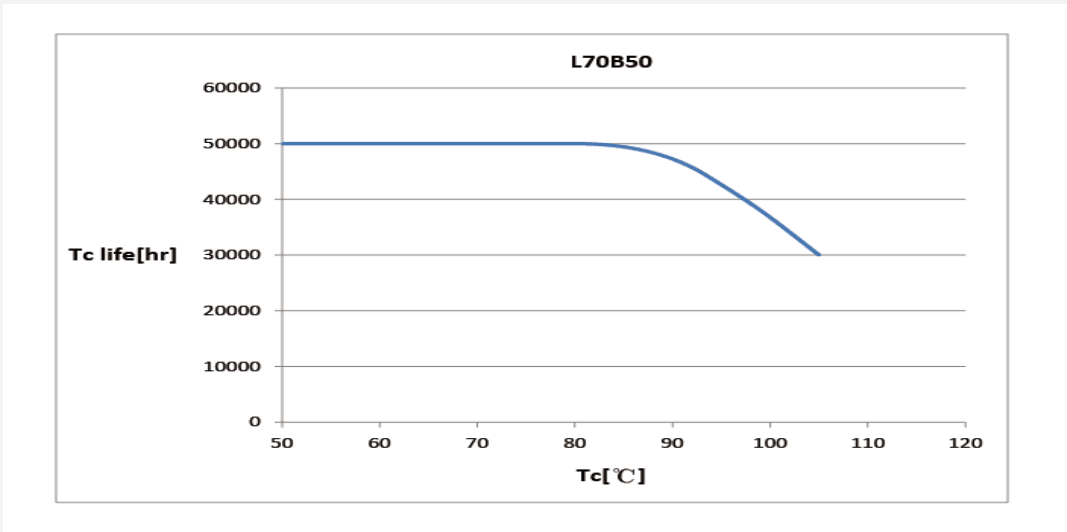
It will cause damage Circuits(that LED is included) and result in destruction.

Do not directly look into lighted LED with naked eyes.

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

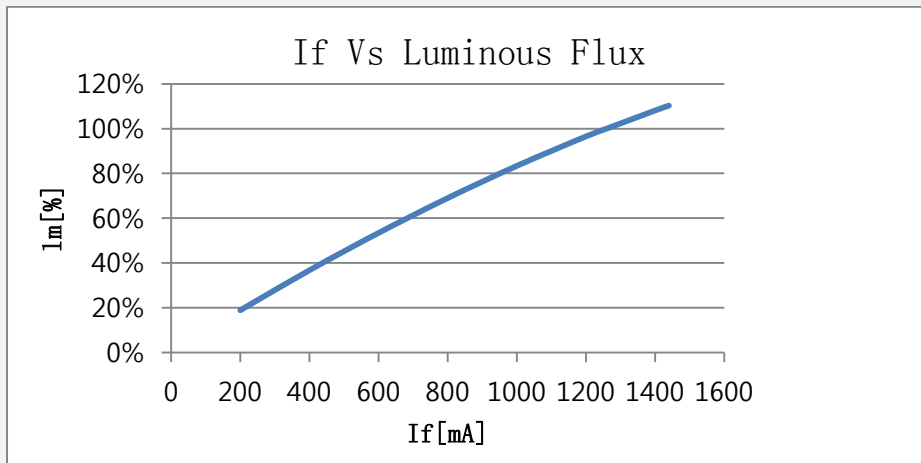
Please be careful when taking a product out from packaging.

APPENDIX 1. Tcvs Lifetime

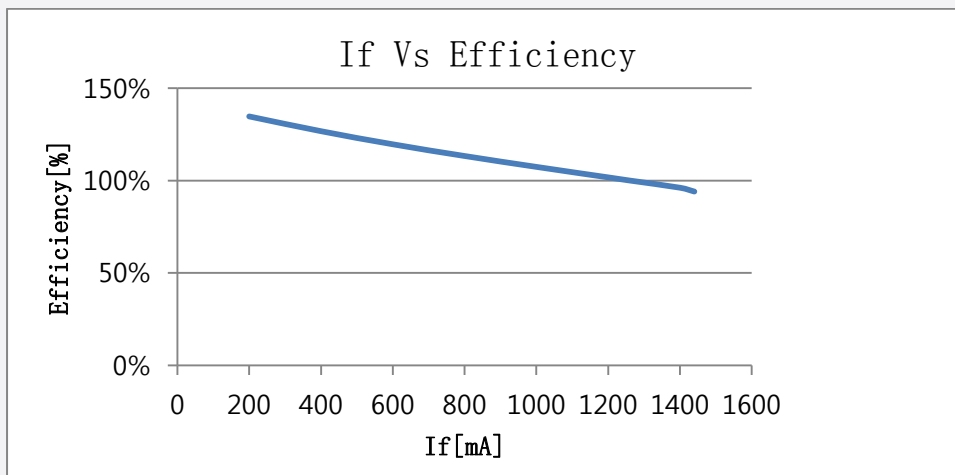


@150mA/LED

APPENDIX 2. Ifvs Luminous Flux



APPENDIX 3. Ifvs Efficiency



Legal and additional information.

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