

## LED Module

LT-Q282A

LT-Q562A

LT-QB22A



### Features & Benefits

- Superior Efficacy, over 200 lm/W @ LED module
- Three length options of 4 / 2 / 1-ft to well-fit in the various luminaire design
- Backward compatibility on mechanical design with H/M/V-series, easy-to-replace

### Applications

- Replacement of T5/T8 tubes
- Office / Retail / Living space
- Troffer / Linear / Pendant

**SAMSUNG**

## Table of Contents

1.	Product Code Information	-----	3
2.	Characteristics	-----	4
3.	Structure and Assembly	-----	8
4.	Certification and Declaration	-----	10
5.	Label Structure	-----	11
6.	Packing Structure	-----	13
7.	Precautions in Handling & Use	-----	14
APPENDIX			
1.	Applicable Solid Wires	-----	15

## 1. Product Code Information

### a) LT-Q282A

Nominal CCT (K)	Product Code
3000	SI-B8V051280US
3500	SI-B8U051280US
4000	SI-B8T051280US
5000	SI-B8R051280US

### b) LT-Q562A

Nominal CCT (K)	Product Code
3000	SI-B8V101560US
3500	SI-B8U101560US
4000	SI-B8T101560US
5000	SI-B8R101560US
5700	SI-B8Q101560US

### c) LT-QB22A

Nominal CCT (K)	Product Code
3000	SI-B8V201B20US
3500	SI-B8U201B20US
4000	SI-B8T201B20US
5000	SI-B8R201B20US

## 2. Characteristics (If=450mA, tp=40 °C)

### a) Basic Information

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

### b) Electro-Optical Characteristics

#### - LT-Q282A

Item	Nom. CCT (K)	Rating			Unit	Remark
		Min	Typ.	Max		
Luminous Flux (Φ <sub>v</sub> )	3000	830	920	1020	lm	I <sub>f</sub> = 450 mA t <sub>p</sub> = 40 °C
	3500	880	975	1085		
	4000	900	1000	1110		
	5000	925	1025	1140		
Luminous Efficacy	3000	168	187	208	lm/W	I <sub>f</sub> = 450 mA t <sub>p</sub> = 40 °C
	3500	178	198	220		
	4000	183	203	225		
	5000	187	208	231		
CCT	3000	2914	3004	3094	K (Initial)	Mac Adam 3 step
	3500	3291	3405	3523		
	4000	3799	3945	4099		
	5000	4838	5025	5230		
Color Rendering Index (Ra)		80	-	-	-	
Operating Current (I <sub>f</sub> )		-	450	1000	mA	
Operating Voltage (V <sub>i</sub> )		10.5	11.0	11.6	Vdc	I <sub>f</sub> = 450 mA t <sub>p</sub> = 40 °C
Power Consumption		4.7	5.0	5.2	W	I <sub>f</sub> = 450 mA t <sub>p</sub> = 40 °C

#### Notes:

- 1) t<sub>p</sub> : temperature at which performance is specified; measured at "Tc point".
- 2) Samsung maintains a measurement tolerance of : Luminous flux: ±7 %, CRI: ±3.0, Voltage: ±5%
- 3) Measurement tolerance of CCT is ±5%

## - LT-Q562A

Item	Nom. CCT (K)	Rating			Unit	Remark
		Min	Typ.	Max		
Luminous Flux ( $\Phi_v$ )	3000	1655	1840	2045	lm	
	3500	1755	1950	2165		
	4000	1800	2000	2220		
	5000	1845	2050	2280		
	5700	1800	2000	2220		
Luminous Efficacy	3000	168	187	208	lm/W	$I_f = 450 \text{ mA}$ $t_p = 40 \text{ }^\circ\text{C}$
	3500	178	198	220		
	4000	183	203	225		
	5000	187	208	231		
	5700	183	203	225		
CCT	3000	2914	3004	3094	K (Initial)	Mac Adam 3 step
	3500	3291	3405	3523		
	4000	3799	3945	4099		
	5000	4838	5025	5230		
	5700	5307	5527	5762		
Color Rendering Index (Ra)		80	-	-	-	
Operating Current ( $I_f$ )		-	450	1000	mA	
Operating Voltage ( $V_f$ )		20.8	21.9	23.1	Vdc	$I_f = 450 \text{ mA}$ $t_p = 40 \text{ }^\circ\text{C}$
Power Consumption		9.4	9.9	10.4	W	

**Notes:**

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

## - LT-QB22A

Item	Nom. CCT (K)	Rating			Unit	Remark
		Min	Typ.	Max		
Luminous Flux ( $\Phi_v$ )	3000	3310	3680	4090	lm	
	3500	3510	3900	4335		
	4000	3600	4000	4445		
	5000	3690	4100	4555		
Luminous Efficacy	3000	168	187	208	lm/W	$I_f = 450 \text{ mA}$ $\phi_p = 40 \text{ }^\circ\text{C}$
	3500	178	198	220		
	4000	183	203	226		
	5000	187	208	231		
CCT	3000	2914	3004	3094	K (Initial)	Mac Adam 3 step
	3500	3291	3405	3523		
	4000	3799	3945	4099		
	5000	4838	5025	5230		
Color Rendering Index (Ra)		80	-	-	-	
Operating Current ( $I_f$ )		-	450	1000	mA	
Operating Voltage ( $V_f$ )		41.6	43.8	46.1	Vdc	$I_f = 450 \text{ mA}$ $\phi_p = 40 \text{ }^\circ\text{C}$
Power Consumption		18.7	19.7	20.7	W	

**Notes:**

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

### c) Temperature Characteristics

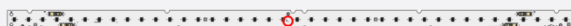
Item	Nominal( $t_p$ )*	Life**	Max( $t_c$ )***	Unit
Temperature	40	80	90	°C

#### Notes:

- \* Temperature used to specify performance of the module ( $t_p$ ).
  - \*\* Rated maximum performance temperature at which lifetime is specified.
  - \*\*\* 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 7)

### d) Thermal Measurement

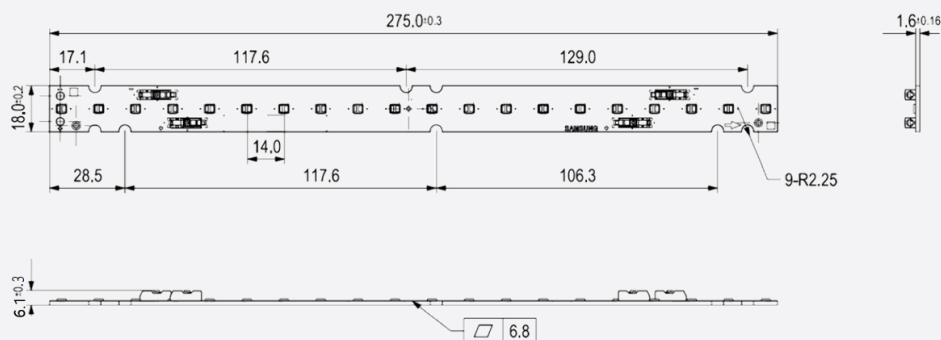
Performance temperatures are measured on "Tc point" as indicated on the module.



### 3. Structure and Assembly

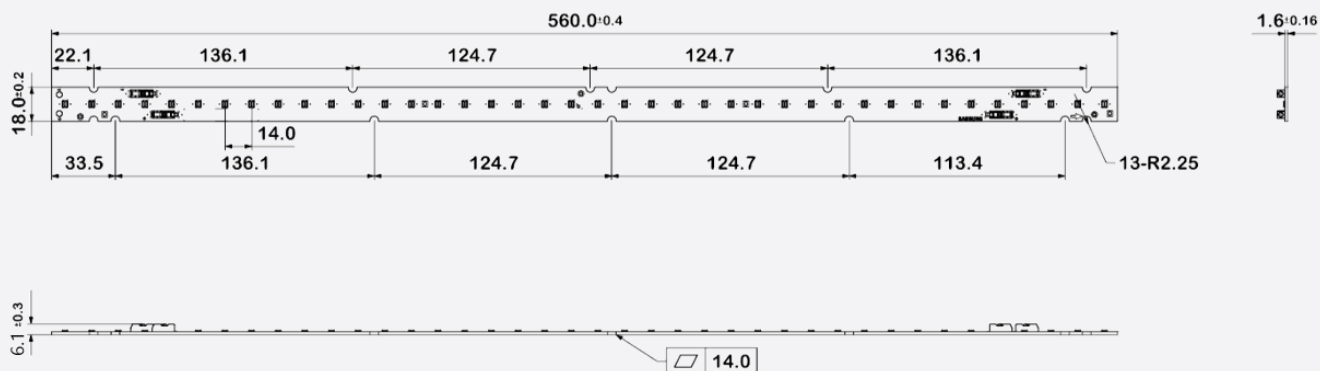
#### a) Appearance & Dimension

##### - LT-Q282A



Dimension	Specification	Tolerance	Unit
Module Length	275.0	±0.3	mm
Module Width	18.0	±0.2	mm
Module Height	6.1	±0.3	mm
PCB Thickness	1.6	±0.16	mm
Module Weight	13.6	±0.68	g

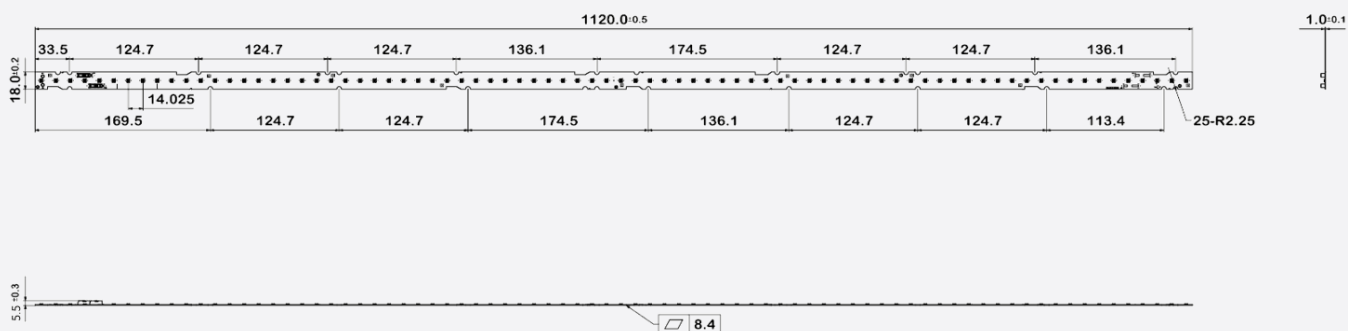
##### - LT-Q562A



Dimension	Specification	Tolerance	Unit
Module Length	560.0	±0.4	mm
Module Width	18.0	±0.2	mm
Module Height	6.1	±0.3	mm
PCB Thickness	1.6	±0.16	mm
Module Weight	27.2	±1.36	g



## - LT-QB22A



Dimension	Specification	Tolerance	Unit
Module Length	1120.0	±0.5	mm
Module Width	18.0	±0.2	mm
Module Height	5.5	±0.3	mm
PCB Thickness	1.0	±0.1	mm
Module Weight	43.5	±2.18	g

## b) Structure

Item	Specification
LED	LM301B Middle Power LED
PCB	Material : copper, solder mask, epoxy
Connector	Wago 2060-451
Wire	24~18 AWG ; terminal strip length of 7.0~9.0 mm (Appendix 1)

## c) Schematic Circuit

- LT-Q282A : 4S x 5P
- LT-Q562A : 8S x 5P
- LT-QB22A : 16S x 5P

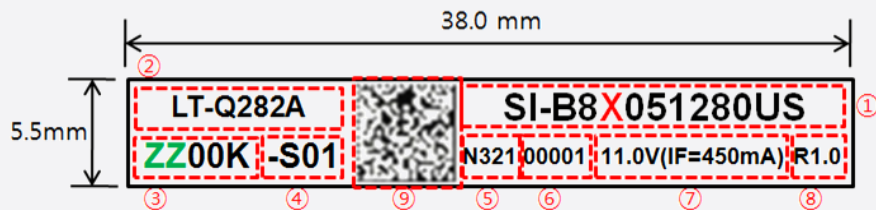
## 4. Certification and Declaration

Item	Compliant to	Remark
Test & Certification	UL / cUL	E344519
Declaration	RoHS	Hazardous Substance & Material
	REACH	Hazardous Substance & Material

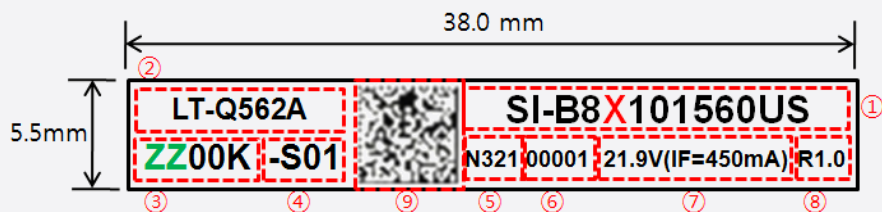
## 5. Label Structure

### a) Module Label

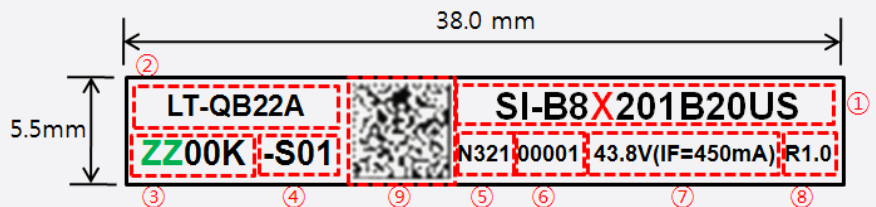
#### - LT-Q282A



#### - LT-Q562A



#### - LT-QB22A



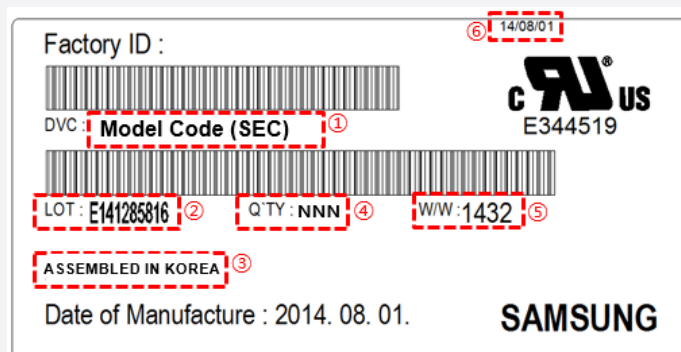
Number	Item	Remark
①	Model code	Refer to page 3 X = V, U, T, R, Q
②	Product name	Refer to page 3
③	Color temperature	ZZ = 30, 35, 40, 50, 57
④	LED maker & Bin rank	-S (Samsung) 00-ZZ
⑤	SMT date	N321 (2013-March-21th)
⑥	Serial No.	00001~99999; Setting "00001" every working day
⑦	Voltage (IF).	
⑧	Product Revision	
⑨	QR Code	LT-Q282A : SI-B8X051280US_N321100001ZZ00K-S01 LT-Q562A : SI-B8X101560US_N321100001ZZ00K-S01 LT-QB22A : SI-B8X201B20US_N321100001ZZ00K-S01

## b) Tray &amp; 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	

## 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 13
⑤	Describe production week	
⑥	Date of Issue	

## 6. Packing Structure

Product	Packing	Quantity (modules)	Dimension (mm)		
			Length	Width	Height
LT-Q282A	Tray	40 ea	380	330	24
	Outer Box	400 ea	385	335	225
	Pallet	12800 ea	1100	1100	130
LT-Q562A	Tray	48 ea	600	444	25
	Outer Box	336 ea	605	449	155
	Pallet	6720 ea	1100	1100	130
LT-QB22A	Tray	20 ea	1180	310	16.8
	Outer Box	200 ea	1185	315	160
	Pallet	2400 ea	1200	1000	130

## 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. 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.

# Legal and additional information.

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