

# Datasheet



**L552A**



**L552B**

| SAMSUNG  |                    |         |       | CUSTOMER |
|----------|--------------------|---------|-------|----------|
| DEVELOP. | PRODUCT<br>MANAGER | QA(DQA) | SALES |          |
|          |                    |         |       |          |

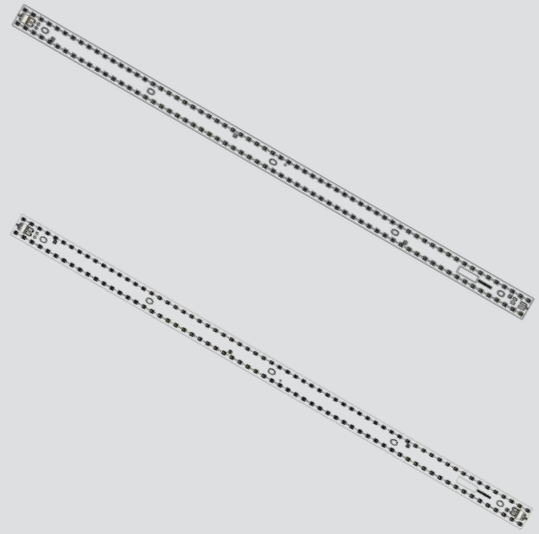
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| Version | Remark                                     | Page | Date     | Traced  |
|---------|--------------------------------------------|------|----------|---------|
| 0.0     | The Preliminary Specification established. | ALL  | 23.10.23 | S.A.JOO |
| 1.0     | The First Specification established        | ALL  | 23.11.23 | S.A.JOO |
|         |                                            |      |          |         |
|         |                                            |      |          |         |
|         |                                            |      |          |         |
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|         |                                            |      |          |         |
|         |                                            |      |          |         |

LED Module

# L Series



## Features & Benefits

- 2835 Pro of high degree of reliability & long lifetime
- High efficacy up to 182.9 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

### a) L552A

| Board Option | CRI | Nominal CCT (K) | Product Code   |
|--------------|-----|-----------------|----------------|
| 128LED-Board | 80  | 3000            | SL-B8V4X90LXWW |
|              |     | 3500            | SL-B8U4X90LXWW |
|              |     | 4000            | SL-B8T4X90LXWW |
|              |     | 5000            | SL-B8R4X90LXWW |

### b) L552B

| Board Option | CRI | Nominal CCT (K) | Product Code   |
|--------------|-----|-----------------|----------------|
| 128LED-Board | 80  | 3000            | SL-B8V4Y90LXWW |
|              |     | 3500            | SL-B8U4Y90LXWW |
|              |     | 4000            | SL-B8T4Y90LXWW |
|              |     | 5000            | SL-B8R4Y90LXWW |

## 2. Characteristics (Rated Current, $t_c = 50^\circ\text{C}$ )

### a) Basic Information

| Item                                      | Unit             | Rating    | Remark                                               |
|-------------------------------------------|------------------|-----------|------------------------------------------------------|
| Rated Lifetime                            | hour             | >50,000   | L70B10 @ $t_c \leq 80^\circ\text{C}$ , Rated current |
| Ingress Protection (IP)                   | -                | no rating |                                                      |
| Ambient / Operating Temperature ( $t_a$ ) | $^\circ\text{C}$ | -20 ~ +50 |                                                      |
| Storage Temperature                       | $^\circ\text{C}$ | -30 ~ +80 |                                                      |

#### 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

- L552A / L552B

128LED-Board : CRI 80

| Item                        | Nom. CCT (K) | Unit | Rating |       |       | Remark                                            |
|-----------------------------|--------------|------|--------|-------|-------|---------------------------------------------------|
|                             |              |      | Min    | Typ.  | Max   |                                                   |
| Luminous Flux               | 3000         | lm   | 7016   | 7795  | 8575  | $I_f = 1000\text{mA}$<br>$t_p = 50^\circ\text{C}$ |
|                             | 3500         |      | 7117   | 7908  | 8699  |                                                   |
|                             | 4000         |      | 7300   | 8112  | 8923  |                                                   |
|                             | 5000         |      | 7423   | 8247  | 9072  |                                                   |
| Luminous Efficacy           | 3000         | lm/W | -      | 172.8 | -     |                                                   |
|                             | 3500         |      | -      | 175.4 | -     |                                                   |
|                             | 4000         |      | -      | 179.9 | -     |                                                   |
|                             | 5000         |      | -      | 182.9 | -     |                                                   |
| Color Rendering Index (Ra)  | -            | -    | 80     | -     | -     | -                                                 |
| Operating Current ( $I_f$ ) | -            | mA   | 80     | 1000  | 2000  | -                                                 |
| Operating Voltage ( $V_f$ ) | -            | Vdc  | 41.94  | 45.1  | 48.26 | $I_f = 1000\text{mA}$                             |
| Power Consumption           | -            | W    | 42.0   | 45.1  | 48.3  | $t_p = 50^\circ\text{C}$                          |

## Notes

- \*  $t_c$  : temperature at which performance is specified measured at "Tc".
- \* Samsung maintains a measurement tolerance of Luminous flux  $\pm 7\%$ , Ra  $\pm 3.0$ , Voltage  $\pm 5\%$ , Power Consumption:  $\pm 0.3\text{W}$

## c) Color Coordinate

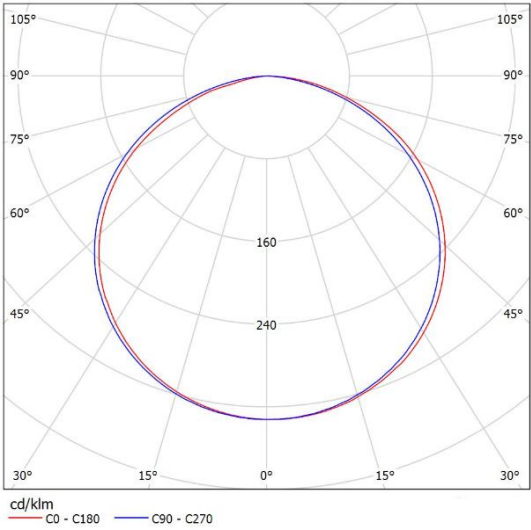
| Model                      | Nom. CCT (K) | Unit | Color Correlated Temperature |      |      | Remark                 |
|----------------------------|--------------|------|------------------------------|------|------|------------------------|
|                            |              |      | min                          | typ  | max  |                        |
| L-Series<br>L552A/L552B    | 3000         | K    | 2870                         | 3045 | 3220 | @LED sorting condition |
|                            | 3500         |      | 3220                         | 3465 | 3710 |                        |
|                            | 4000         |      | 3710                         | 3985 | 4260 |                        |
|                            | 5000         |      | 4746                         | 5029 | 5312 |                        |
| Color Consistency(initial) | -            | Step | -                            | -    | 3    |                        |

## Notes

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

d) Light Distribution

| Item              | Unit      | Nominal | Tolerance | Remark |
|-------------------|-----------|---------|-----------|--------|
| Beam Angle (FWHM) | °(degree) | 118     | ± 5       |        |



e) Temperature Characteristics

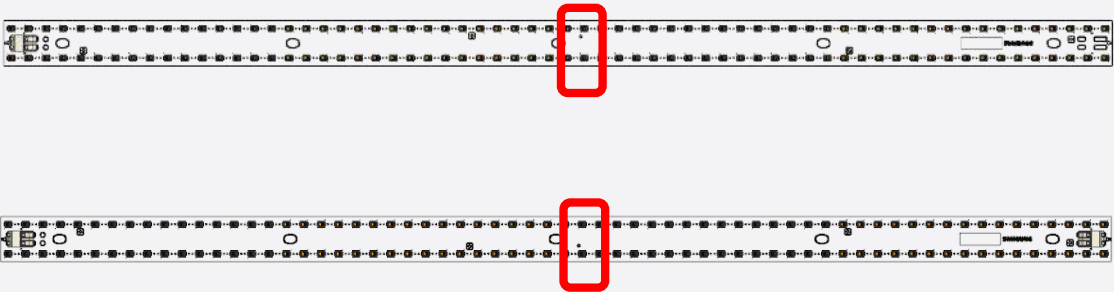
| Item                                      | Unit | Nominal( <i>t<sub>p</sub></i> )* | Life( <i>t<sub>L</sub></i> )** | Max( <i>t<sub>c</sub></i> )*** |
|-------------------------------------------|------|----------------------------------|--------------------------------|--------------------------------|
| Case Temperature ( <i>t<sub>c</sub></i> ) | °C   | 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

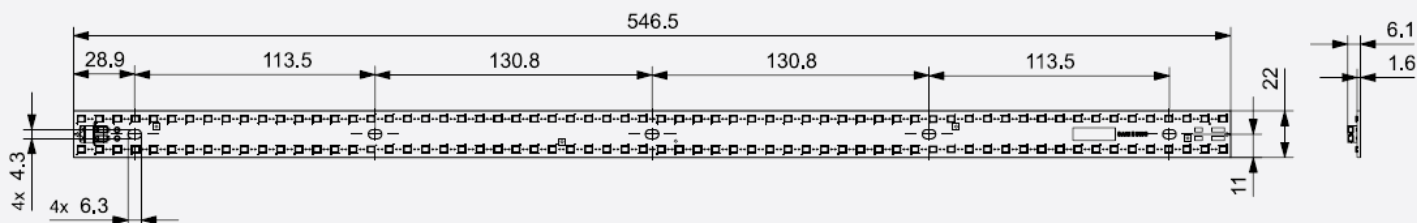
Performance temperatures are measured on “Tc” as indicated on the module.



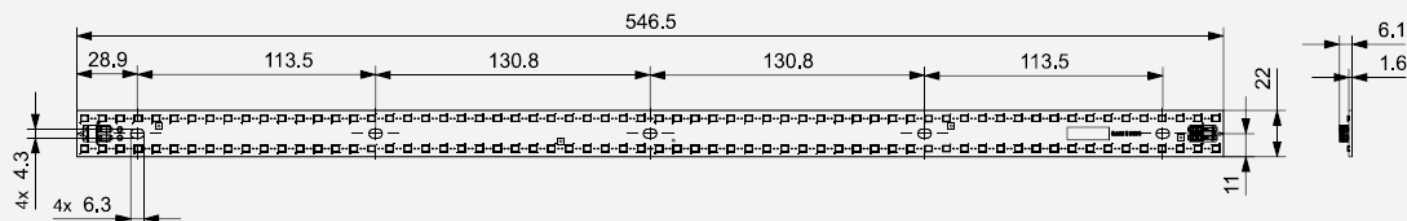
### 3. Appearance and Structure

#### a) Appearance & Dimension

##### - L552A



##### - L552B



| Dimension     | Specification | Tolerance | Unit |
|---------------|---------------|-----------|------|
| Module Length | 546.5         | ±0.3      | mm   |
| Module Width  | 22.0          | ±0.1      | mm   |
| Module Height | 6.1           | Ref.      | mm   |
| PCB Thickness | 1.6           | ±0.16     | mm   |
| Module Weight | 36            | Ref.      | g    |

#### b) Structure

| Item      | Specification                                                     |
|-----------|-------------------------------------------------------------------|
| LED       | LM281B+ Pro Middle Power LED<br>L552A / L552B : 128LEDs           |
| PCB       | MCPCB                                                             |
| Connector | 2pin poke-in type<br>L552A : 1 connectors<br>L552B : 2 connectors |

### c) Schematic Circuit

- L552A / L552B : 128LED 16S x 8P

### d) Handling Guide

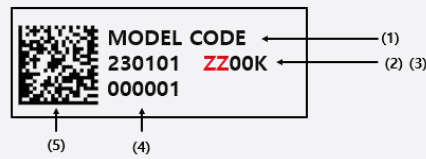
- \* Please use antistatic gloves or other ESD protection methods when handling this cuttable board to prevent ESD damage or contamination of LEDs.
- \* Customers should use proper tools and not use hands when they separate this cuttable board. It is not allowed to bend PCB and touch LED.
- \* Please be thoughtful 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     | UL 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 2~3                                                                        |
| ②      | Date of manufacture | YYMMDD                                                                                   |
| ③      | Color temperature   | ZZ = 50                                                                                  |
| ④      | Series number       | 000001~999999; Setting "000001" every working day                                        |
| ⑤      | QR code             | L552A : SL-B8R4X90LXWW YYMMDD ZZ00K 000001<br>L552B : SL-B8R4Y90LXWW YYMMDD ZZ00K 000001 |

### b) Tray & MBB Bag Label



| Number | Item                                    | Remark            |
|--------|-----------------------------------------|-------------------|
| ①      | Model Code                              | Refer to page 2~3 |
| ②      | LOT ID                                  |                   |
| ③      | Quantity                                | Refer to page 15  |
| ④      | Production Date ( year & week )         |                   |
| ⑤      | Country of Origin                       | CHINA             |
| ⑥      | Production Date ( year / month / date ) |                   |

## c) Box Label

|           |                                                                                                                         |                                                                                    |
|-----------|-------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|           | Factory ID : DW                                                                                                         | 23/01/01 ← (8)                                                                     |
| (1)       | <br>DVC : MODEL CODE                   |  |
| (2)(3)(4) | <br>LOT : E191280001 Q'TY : W/W : 2301 |                                                                                    |
| (5)       | Environment Location : Damp                                                                                             |                                                                                    |
| (6)       | Electrical Ratings : 48.26 Vdc , 2.0 A                                                                                  |                                                                                    |
| (7)       | ASSEMBLED IN CHINA                                                                                                      |                                                                                    |
|           | Date of Manufacture : 2023.01.01                                                                                        | <b>SAMSUNG</b>                                                                     |

| Number | Item                                    | Remark            |
|--------|-----------------------------------------|-------------------|
| ①      | Model Number (Product Code)             | Refer to page 2~3 |
| ②      | Lot No.                                 |                   |
| ③      | Packing Quantity                        | Refer to page 15  |
| ④      | Production Date ( year & week )         |                   |
| ⑤      | UL Cert. (Environment Location)         | Damp              |
| ⑥      | UL Cert. (Electrical Ratings)           | 48.26 Vdc , 2.0 A |
| ⑦      | Country of Origin                       | CHINA             |
| ⑧      | Production Date ( year / month / date ) |                   |

## 6. Packing Structure

| Product        | Packing   | Quantity<br>(modules) | Weight   | Dimension (mm) |       |        |
|----------------|-----------|-----------------------|----------|----------------|-------|--------|
|                |           |                       |          | Length         | Width | Height |
| L552A<br>L552B | Tray      | 28 ea                 | -        | 605            | 475   | 26     |
|                | Outer Box | 224 ea                | 12.24kg  | 610            | 480   | 185    |
|                | Pallet    | 3,584 ea              | 195.84kg | 1100           | 1100  | 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.
- 13) Solid Wire Removal from WAGO connector
  - Remove Solid Wire by lightly pressing on push-button, e.g., via optional operating tool (WAGO 206-860).
  - ✕ Too much stress at this stage can cause the connector to fail or damage..

# [Appendix]

## 1. Applicable Solid Wire Information

### a) Strip details

| Connection method                | Poke In                             |
|----------------------------------|-------------------------------------|
| Solid Conductor                  | 0.2-0.75mm <sup>2</sup> / 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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