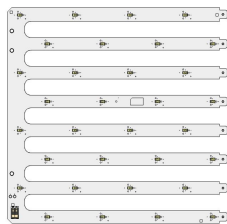
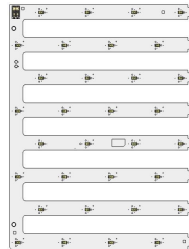


Data Sheet



<Finger-SQ32B>



<Finger-RT32B>

| Finger-32LED | | | |
|-------------------|----------------------------|---------------------|---------------------|
| Model Name | Finger-SQ32B, Finger-SQ32B | | |
| Type | 24V, 385mA | | |
| Parts No. | CCT | Finger-SQ32B | Finger-RT32B |
| | 3000K | SI-B8V09626001 | SI-B8V09628001 |
| | 3500K | SI-B8U09626001 | SI-B8U09628001 |
| | 4000K | SI-B8T09626001 | SI-B8T09628001 |
| | 5000K | SI-B8R09626001 | SI-B8R09628001 |
| | 6500K | SI-B8P09626001 | SI-B8P09628001 |

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LED Module

Rev. No

Page

2.1

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Revision History

| Rev.No | Date | Page | Revision | Remark |
|--------|-------------|------|---|--------|
| 1.0 | April, 2014 | - | The first preliminary specification is established. | - |
| 1.5 | April, 2014 | - | The final specification is released. | - |
| 2.0 | May 2014 | 1,5 | Higher flux version is added in the product list | - |
| 2.1 | June 2014 | 5 | Min and Max values of higher flux version is added. | - |

Contents

| | | |
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| 2 | Specification | 3 |
| 3 | Structure and Assembly | 5 |
| 4 | Approbation | 9 |
| 5 | Packing | 10 |
| 6 | Precautions In Handling | 10 |

1. Products and Application

This specification defines general specification and performance for Flat panel LED module.

Samsung Finger-SQ32B, Finger-RT32B Modules target to replace conventional fluorescent lamps as T5, T8 and so on with LED solutions. Due to transferring LED, new luminaire transferred to LED can take more energy saving and longer life-time.

In special, Samsung has competitiveness in middle-power solutions. This module uses LM561B. Middle power solutions provide more homogeneous and higher efficient lights. Linear module has been designed to expand length simply and adopt easy connection way.

2. Specification

| No | Item | Specifications | Unit | Remark |
|----|-----------------------|--|------|--------------------------------|
| 1 | Dimension | SQ : 250 x 259 x 6.8 RT : 216 x 273 x 6.8 | mm | Tolerance : $\pm 0.5\text{mm}$ |
| 2 | Weight | SQ : 90g, RT : 82g | g | Tolerance : 5g |
| 3 | Rated Lifetime | 50,000 hr | hr | L70B50 @Tc=80°C |
| 4 | Ingress Protection | N/A | - | - |
| 5 | Operating Temperature | Ta= -20 ~ +50 | °C | not related lifetime |
| 6 | Storage Temperature | Ta= -40 ~ +80 | °C | - |

| No. | Item | Specifications | | | | | Unit | Remark |
|-----|-------------------|----------------|-------|------|-------------|------|------|--------------------------|
| | | Sym. | Model | Min. | Nom. | Max. | | |
| 7 | Luminous flux | Φ_v | 3000K | 1183 | 1310 | 1437 | lm | @385mA, 24V Tp = 35°C |
| | | | 3500K | 1202 | 1330 | 1460 | | |
| | | | 4000K | 1240 | 1370 | 1507 | | |
| | | | 5000K | 1279 | 1420 | 1554 | | |
| | | | 6500K | 1243 | 1380 | 1510 | | |
| 8 | Efficiency | LPW | 3000K | - | 142 | - | lm/W | @385mA, 24V Tp = 35°C |
| | | | 3500K | - | 145 | - | | |
| | | | 4000K | - | 149 | - | | |
| | | | 5000K | - | 154 | - | | |
| | | | 6500K | - | 150 | - | | |
| 10 | Operating Current | Iop | - | - | 385 | 600 | mA | - |
| 11 | Operating Voltage | Vdc | - | 22.0 | 24.0 | 26.0 | V | @385mA, Tp = 35°C |
| 12 | Power Consumption | - | - | - | 9.2 | - | W | @385mA, Tp = 35°C |

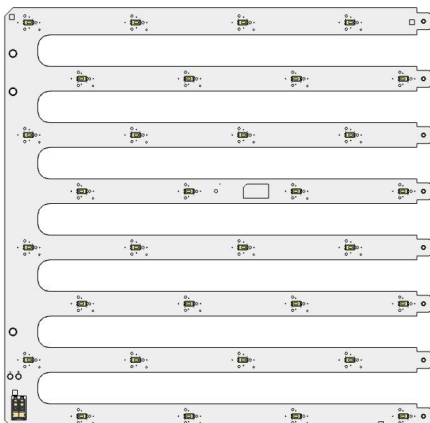
| No. | Item | Specifications | | | | | Unit | Remark |
|-----|-----------------------|----------------|---------|-------|-------|-------|------|------------------------------|
| | | Sym. | Model | Min. | Nom. | Max. | | |
| 13 | SDCM | - | ~4000K | - | 3 | - | step | LED to LED @ initial time |
| | | | 5/6500K | - | 4 | - | | |
| 14 | Color Rendering Index | CRI | - | 80 | - | - | Ra | - |
| 15 | CCT | - | 4000K | 3,710 | 3,985 | 4,260 | K | @385mA, 24V Tp = 35°C |
| | | | 5000K | 4,745 | 5,028 | 5,311 | | |
| | | | 6500K | 6,020 | 6,530 | 7,040 | | |

※ Measurement tolerance of luminous flux becomes $\pm 7\%$ in the value,
 measurement tolerance of Vf becomes $\pm 0.3V$ in the value
 and the measurement tolerance of the color coordinates is ± 0.005 .

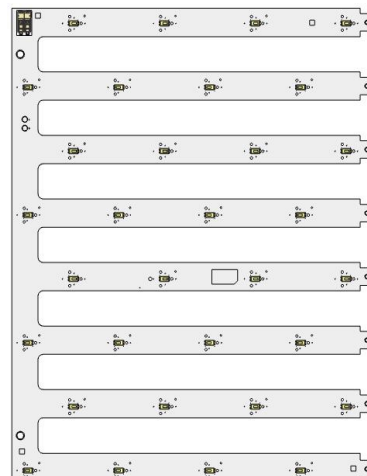
3. Structure and Assembly

3-1. Appearance

<Finger-SQ32B>



<Finger-RT32B>



<Finger-SQ32B>

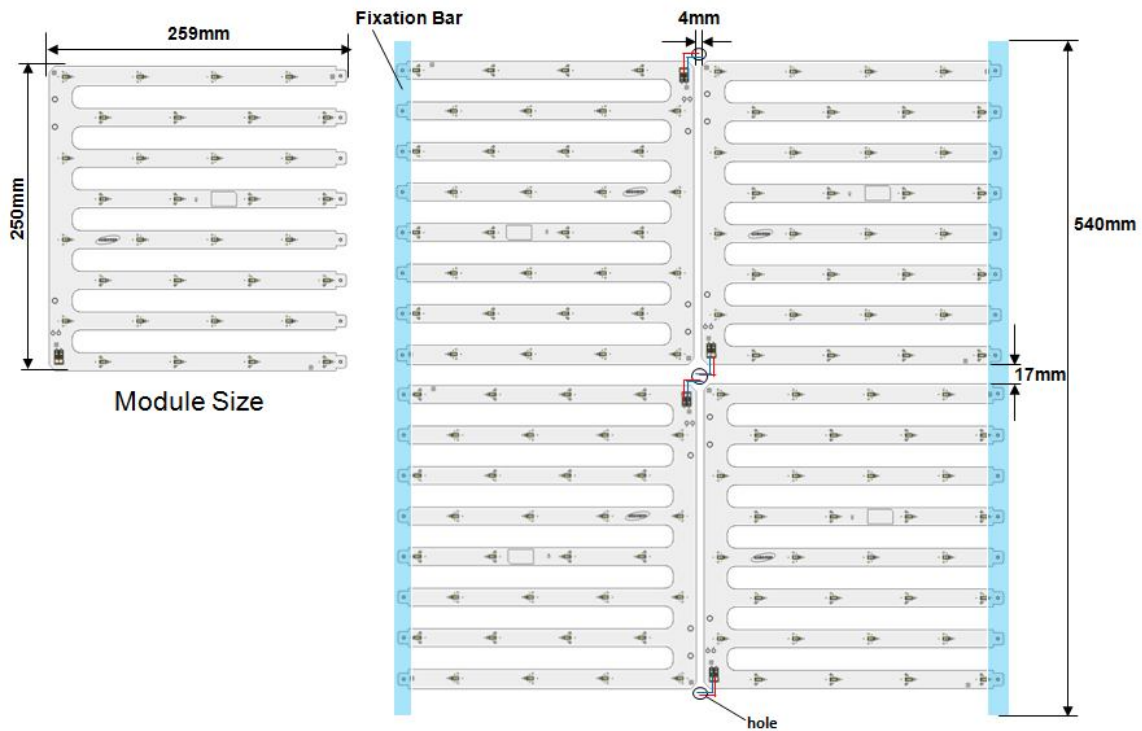
| Item | | Specifications |
|------|------------------|----------------|
| L | Length of PCB | 259.0 ± 0.5 mm |
| W | Width of PCB | 250.0 ± 0.5 mm |
| H1 | Thickness of PCB | 1.6 ± 0.1 mm |
| H2 | Height of PCBA | 6.8 ± 0.2 mm |

<Finger-RT32B>

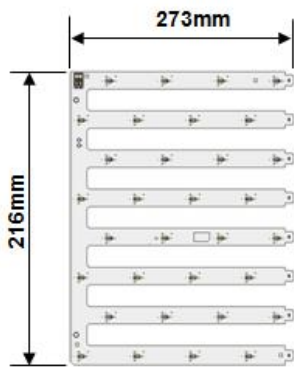
| Item | | Specifications |
|------|------------------|----------------|
| L | Length of PCB | 273.0 ± 0.5 mm |
| W | Width of PCB | 216.0 ± 0.5 mm |
| H1 | Thickness of PCB | 1.6 ± 0.1 mm |
| H2 | Height of PCBA | 6.8 ± 0.2 mm |

3-3. Assembly

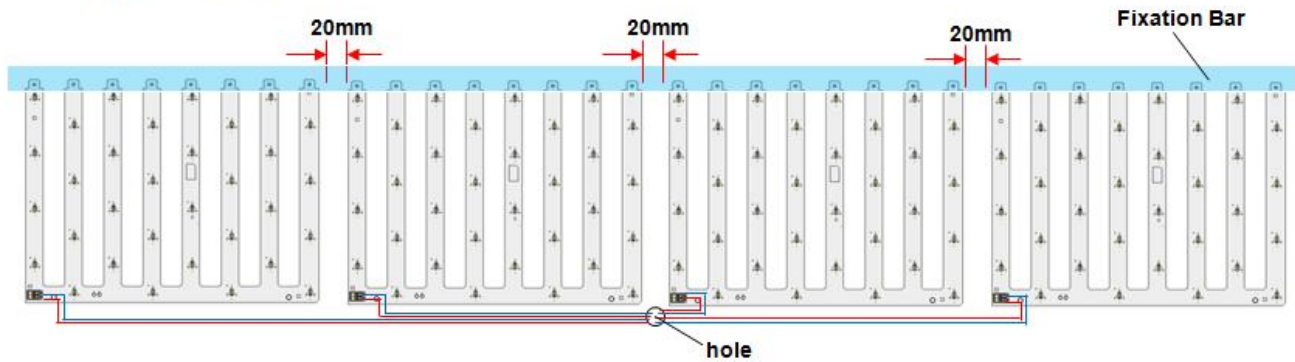
(1) Design case of 2x2 (600mm x 600mm) luminaire



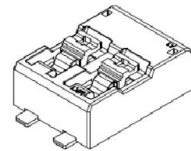
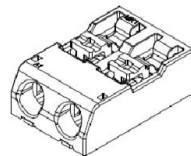
(2) Design Case of 1x4 (300 x 1200 mm) luminaire



Module Size



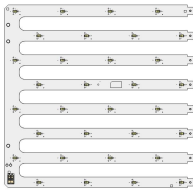
(3) Connector : Terminal strip type



AWG 24-18

- ① Insert solid conductors via push-in termination.
- ② Insert or remove fine-standard conductors by lightly pressing on push-button.

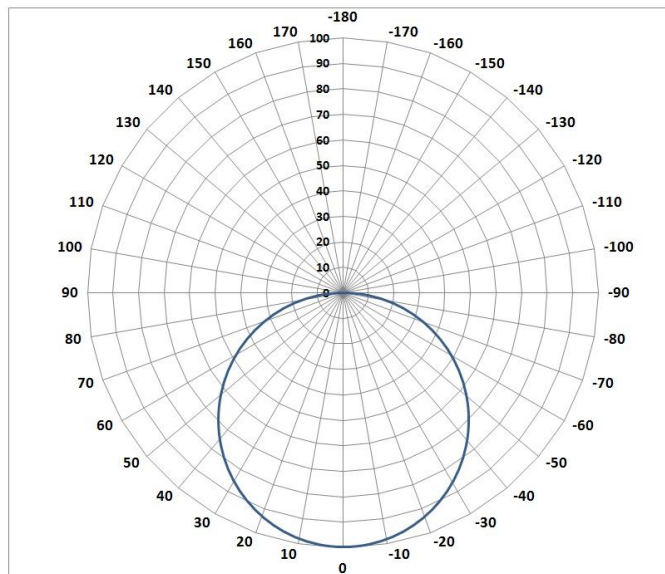
3-4. Structure



| No. | | Item | Specifications |
|-----------------|-----|-----------|--|
| Module Assembly | 3-1 | LED | LM561B : Middle Power LED 32 ea |
| | 3-2 | PCB | Material : Copper, Solder mask and Epoxy |
| | 3-3 | Connector | 2-pin Poke-in type |

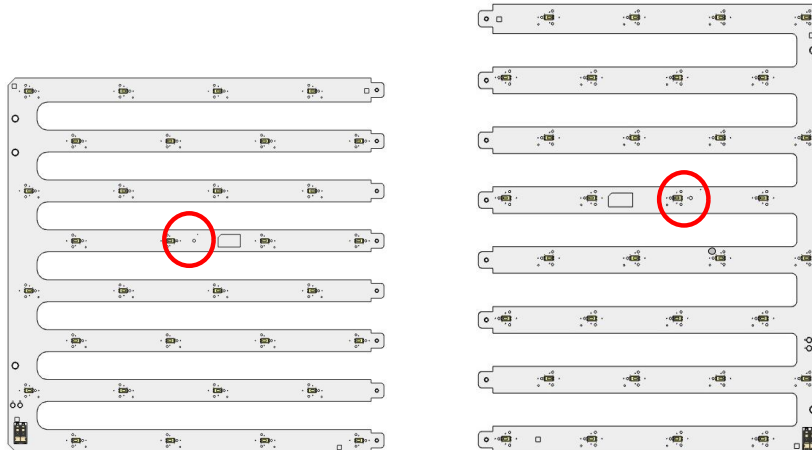
3-5. Light Distribution

(1) Polar Intensity Diagram : Beam Angle 115 ± 5 [°]



3-6. Thermal Management

(1) Tc Point : See the below red mark.



(2) Tc_life : Max temperature to reach 50,000 hours

- Tc_life = 80°C for >50,000 @ ≤ 400 mA (L70B50)

(3) Tc_max : Max temperature to operate

- Tc_max = 65 °C

4. Approbation

| Item | Compliant to | Result / Remark |
|---------------------------------|-----------------------|-----------------|
| General | Eye safety : IEC62471 | LM561B LED |
| Hazardous Substance & Materials | RoHS | Declared |
| | Reach | Declared |
| Certification | UL/cUL | E344519 |

5. Packing

5-1 Dimension & Module Q'ty

(1) Finger-SQ32

| Item | 1 box | 1 pallet |
|-----------|--------------------|------------------------|
| Dimension | 365 x 332 x 267 mm | 1200 x 800 x 145 mm |
| Q'ty | 60 modules | 1800 modules, 30 boxes |

(2) Finger-RT32

| Item | 1 box | 1 pallet |
|-----------|--------------------|------------------------|
| Dimension | 365 x 332 x 267 mm | 1200 x 800 x 145 mm |
| Q'ty | 60 modules | 1800 modules, 30 boxes |

6. Precautions In Handling

- 1) LED Lighting 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).
- 2) Handling
 - Don't drop the unit and don't give the unit any shocks.
 - Don't storage the Module in a dusty place or room.
 - Don't take the unit to pieces.
- 3) Cleaning
 - This LED Module should not be used in any type of fluid such as oil, organic solvent, etc.
 - It is recommended that IPA(Isopropyl Alcohol) be used as a solvent for cleaning the LED Module.
 - 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 Module by the ultrasonic.
 - Before cleaning, a pre-test should be done to confirm whether any damage to the LED Lighting will occur.
- 4) Static Electricity
 - Static electricity or surge voltage damages the LED Lighting.

5) Discoloration

- VOCs (volatile organic compounds) may be occurred by adhesives, flux, hardener or organic additives which is used in luminaires (fixture) and LED silicone bags are permeable to it. It may lead a discoloration when LED expose to heat or light.
- This phenomenon can give a significant loss of light emitted(output) from the luminaires(fixture).
- In order to prevent these problems, we recommend you to know the physical properties for the materials used in luminaires, it requires to select carefully.

6) Risk of Sulfurization (or Tarnishing)

- The lead frame from Samsung Electronics is a plated package and it may change to black (or dark colored) when it is exposed to Ag (a), Sulfur (S), Cchlorine (Cl) or other halogen compound. It requires attention.
- Sulfide (Sulfurization) of the lead frame may cause a change of degradation intensity, chromaticity coordinates and it may cause open circuit in extreme cases. It requires attention.
- Sulfide (Sulfurization) of the lead frame may cause of storage and using with oxidizing substances together. Therefore, LED is not recommend to use and store with the below list.
: Rubber, Plain paper, lead solder cream etc.

7) Others

- If over voltage which exceeds the absolute maximum rating is applied to LED Lighting, it will cause damage Circuits(that LED is included) and result in destruction.
- Do not directly look into lighted LED with naked eyes for long time.

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This is the last page.