



# THE DATASHEET OF SL-PGR1W27MBWW



LED Module  
Modular Platform Engine Series

# T-Type Gen2

## 15W LED Module

SL-PGR1W27MBWW



Samsung outdoor modules enable flexible modular design,  
providing better solution for outdoor application

### Features & Benefits

- High lumen density of 1800 lm
- Seamless combination by modular design
- Lens-type module, that makes fixtures easily designed
- IP66 for durability and robustness



### Applications

Outdoor Lighting:

- Roadway
- Street Light
- Parking Lot
- Tunnel Light

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## 1. Product Code Information

| Light Distribution (Optical Lens Type) | Nominal CCT (K) | Product Code   |
|--|-----------------|----------------|
| IESNA Type II Medium (L)               | 5000            | SL-PGR1W27MBWW |

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**Notes:**

- 1) (L) : optimized for Luminance uniformity

## 2. Characteristics

### a) Maximum Rating

| Item                            | Rating                                   | Unit             | Remark                                 |
|---------------------------------|--|------------------|--|
| Rated Lifetime                  | >50,000                                  | hour             | L80B50 @ $t_p, 50 = 105^\circ\text{C}$ |
| Ingress Protection (IP)         | IP66                                     | -                | For Damp Location (UL marking)         |
| Operating Temperature ( $T_c$ ) | 10 ~ 92                                  | $^\circ\text{C}$ |  |
| Storage Temperature ( $T_a$ )   | -30 ~ +70                                | $^\circ\text{C}$ |  |
| ESD                             | $\pm 8$ kV (contact) / $\pm 15$ kV (air) | kV               |  |
| Working Voltage for Insulation  | 50                                       | V                |  |

※  $T_a$  : Ambient Temperature,  $T_c$  : Critical Temperature at  $T_{case}$  Point

### b) Electro-optical Characteristics ( $I_F = 700$ mA, $T_{case} = 58^\circ\text{C}$ )

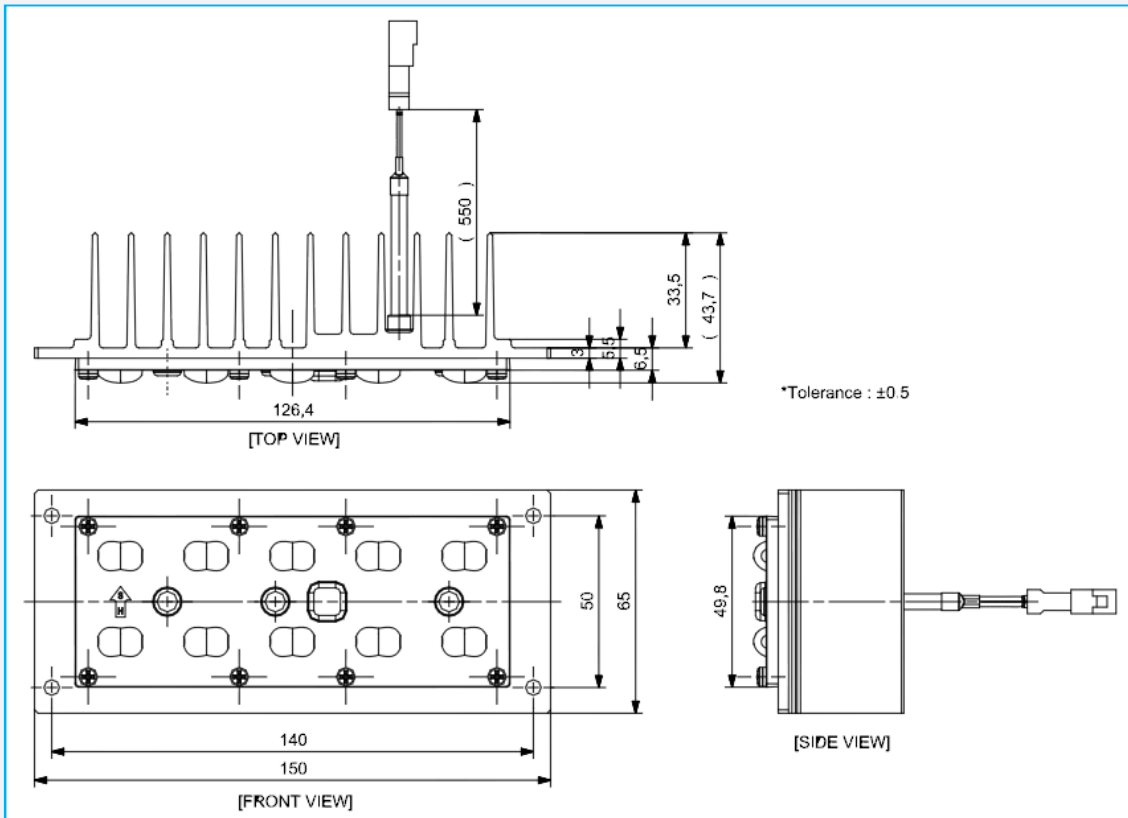
| Item                        | Unit | Nom. CCT (K) | Min. | Typ. | Max. | Remark                    |
|-----------------------------|------|--------------|------|------|------|---------------------------|
| Luminous Flux ( $\Phi_v$ )  | lm   | 5000         | 1650 | 1800 | -    |                           |
| Luminous Efficacy           | lm/W | 5000         | -    | 116  | -    | IESNA Type II Medium (L)  |
| CCT                         | K    | 5000         | 4745 | 5000 | 5311 |                           |
| Color Rendering Index (Ra)  |      | -            | 75   |      |      |                           |
| Operating Current ( $I_F$ ) | mA   |              | -    | 700  | 1000 | per module                |
| Operating Voltage ( $V_F$ ) | Vdc  |              | 18.2 | 21.0 | 23.1 |                           |
| Power Consumption (P)       | W    |              | -    | 15.5 | 16.5 | @ 21 V, 700mA in a module |

#### Notes:

- 1)  $T_{Case}$ : Case temperature, measured at “**Tcase point**” and at the rated typical DC current
- 2) Samsung maintains measurement tolerance of  
: luminous flux =  $\pm 7\%$ , CRI =  $\pm 1$ , voltage =  $\pm 5\%$ , CCT =  $\pm 5\%$ , Current =  $\pm 5\%$
- 3) The maximum operating current means the highest limit in any operating condition
- 4) Voltage difference between modules is tightly controlled to be less than 1.0 V so that the maximum current of any module can be limited close to the value stated on above table (voltage bin of the module is printed at the labels on each module and on outer box)
- 5) The power consumption for a specific module is dependent on the operating voltage distribution across the modules in parallel connection

### 3. Structure & Assembly

#### a) Appearance



#### Note:

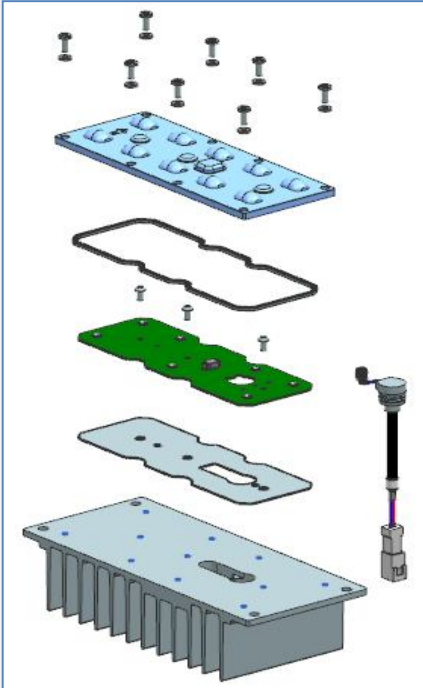
The appearance will be different for various optical solutions depending on the combination of the available core lenses.

Critical dimensions are the same for all optical solutions, except for thickness difference at the core lens cross-section.

**b) Dimension**

| Dimension     | Specification | Tolerance | Unit | Remark |
|---------------|---------------|-----------|------|--------|
| Module Length | 150           | ±0.5      | mm   |        |
| Module Width  | 60            | ±0.5      | mm   |        |
| Module Height | 43.7          | ±0.5      | mm   |        |
| PCB Thickness | 1.2           | ±0.12     | mm   |        |
| Module Weight | 295           | ±20       | g    |        |

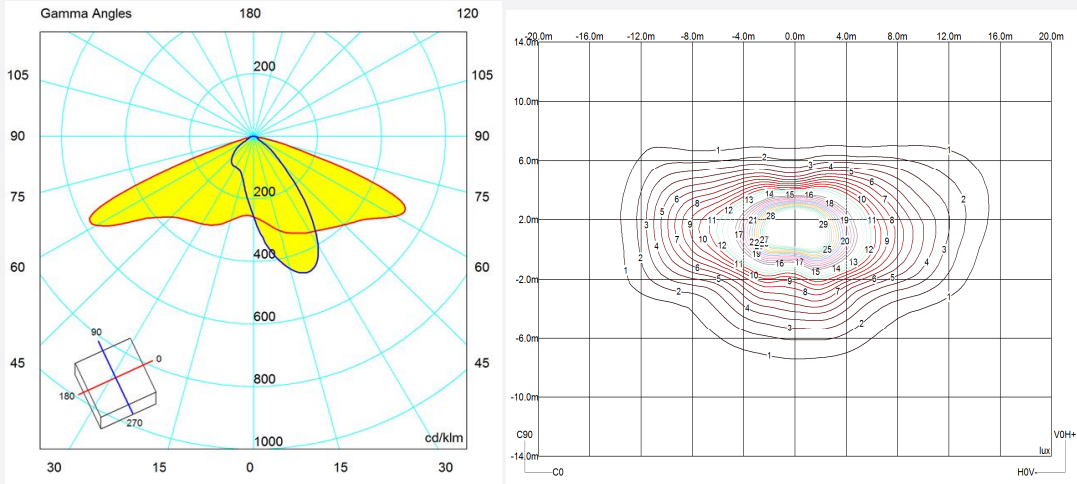
## c) Structure



| No. | Parts                        | Specifications   |
|-----|------------------------------|--|
| 1.  | Lens cover screws<br>(8 pcs) | Material: Stainless steel with teflon washer<br>Location: Between array lens cover and base plate heat sink                                    |
| .   | Array lens cover             | Lens type : IESNA Type II Medium(L)<br>Material: Polycarbonate<br>Thickness: 2.0 mm<br>UL-94 Flammability: V-2                                 |
| 3.  | Rubber seal                  | Material: Molded silicone  |
| 4.  | LED board                    | LED: LH351B Ceramic high flux rank (7 pcs)<br>Material: MC-PCB, aluminum<br>Thickness: 1.2 mm<br>Screws: Stainless steel (3 pcs)               |
| 5.  | Side inlet harness           | Material: Molded PVC coated with silicone sealant, 105 °C rating<br>Wires: 24 AWG, 105 °C rating, with end connector<br>Length (wires): 550 mm |
| 6.  | Thermal pad                  | Between PCB and base plate heat sink   |
| 7.  | Base plate heat sink         | Material: Extrusion aluminum   |

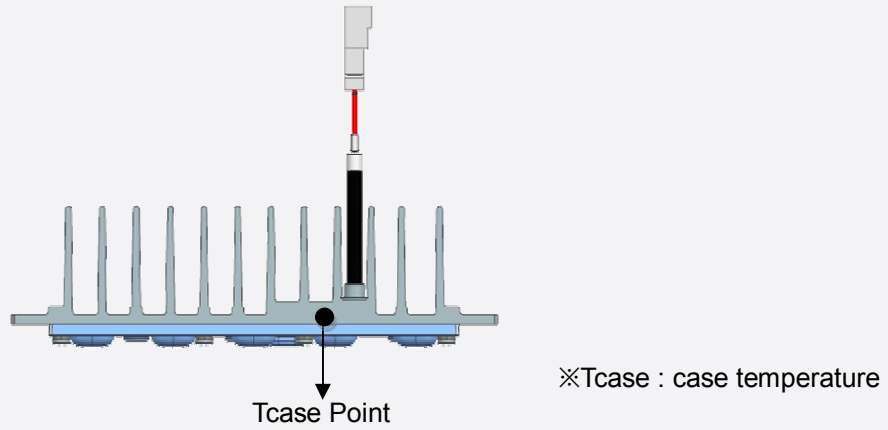
### d) Light Distribution

#### IESNA Type II Medium(L) Lens Type

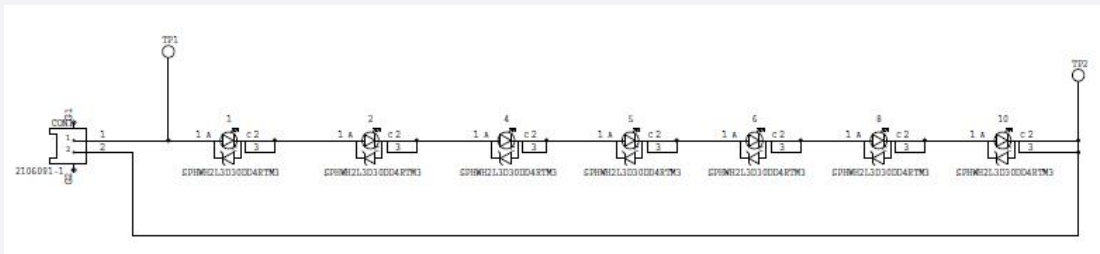


### e) Thermal Management

Performance temperatures are measured on “Tcase point” as indicated below (located at long side-center of the Module):



### f) Schematic Circuit



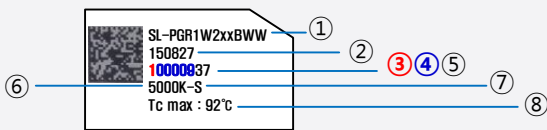
## 4. Certification & Declaration

| Item        | Compliant to | Remark                         |
|-------------|--------------|--------------------------------|
| Declaration | RoHS         | Hazardous Substance & Material |



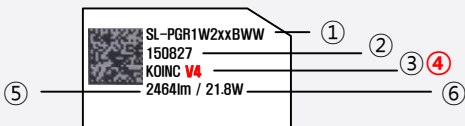
## 5. Label Structure

### a) LED Board Label



| Number | Item                        | Description                              |
|--------|-----------------------------|--|
| ①      | Model Number (Product Code) | Refer to page 3                          |
| ②      | SMT Date Code               | -  |
| ③      | SMT Line                    | -  |
| ④      | Serial Number               | 00001 ~ 99999                            |
| ⑤      | LED Binning Code            | -  |
| ⑥      | CCT                         | 5000 K                                   |
| ⑦      | LED Maker                   | S : Samsung                              |
| ⑧      | Tc max                      | 92°C, Tc : Critical Temp. at Tcase Point |

### b) Module Label



| Number | Item                        | Description                          |
|--------|-----------------------------|--------------------------------------|
| ①      | Model Number (Product Code) | Refer to page 3                      |
| ②      | Production Date Code        | -                                    |
| ③      | Manufacturing Location      | KO (Country / Korea) + INC (Factory) |
| ④      | Vf Binning Code             | -                                    |
| ⑤      | Luminous Flux               | -                                    |
| ⑥      | Operating Wattage           | -                                    |

c) Outer Box Label



| Number | Item                                  | Description   |
|--------|---------------------------------------|---|
| ①      | Model Number (Product Code)           | Refer to page 3   |
| ②      | Lot No.                               | Factory Code (2) + Production Date (4) + Serial No. (4) |
| ③      | Country of Origin                     | KOREA   |
| ④      | Packing Quantity                      | 12 pc   |
| ⑤      | Production Date (year/week)           | yyww  |
| ⑥      | Label Printing Date (year/month/date) | yy/mm/dd  |

## 6. Packing Structure

### Packing Process

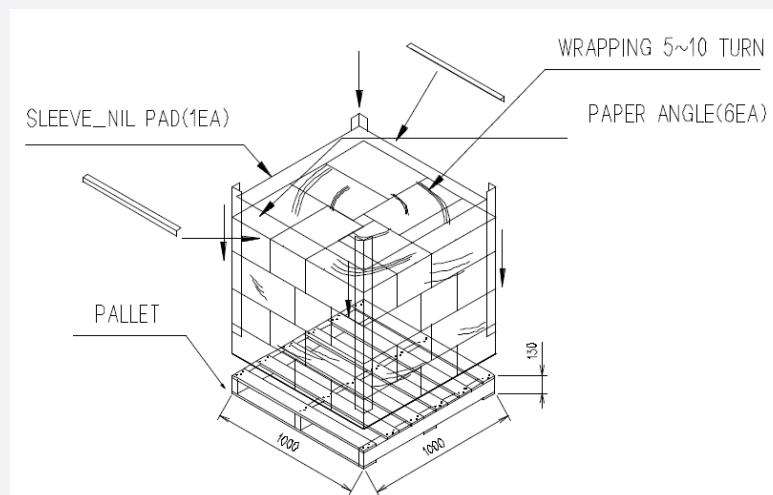
**Step 1:** 6 Modules of the same voltage bin are placed inside one inner box:



**Step 2:** Two stacks of inner boxes (totaling 12 Modules, all having same voltage bin) are placed inside one outer box:



**Step 3:** 32 boxes (384 modules) are placed on one pallet:



| Packing   | Quantity (modules)   | Dimension (mm) |       |        |           |
|-----------|----------------------|----------------|-------|--------|-----------|
|           |                      | Length         | Width | Height | Tolerance |
| Inner Box | 6                    | 400            | 227   | 83     | ±3        |
| Outer Box | 12 (2 inner boxes)   | 419            | 240   | 171    | ±5        |
| Pallet    | 384 (32 outer boxes) | 1000           | 1000  | 130    | ±10       |

## 7. Precautions in Handling & Use

7.1. 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.

### 7.2. 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.
- (7) \*VOCs can be generated from adhesives, flux, hardener or organic additives used in luminaires. This phenomenon can cause a significant loss of light emitted from the luminaires. 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.  
(\*VOCs: Volatile Organic Compounds)

### 7.3. 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.

### 7.4. 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.

### 7.5. Storage

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

### 7.6. 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.

# Legal and additional information.

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Samsung Electronics Co., Ltd.  
95, Samsung 2-ro  
Giheung-gu  
Yongin-si, Gyeonggi-do, 446-711  
KOREA

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