LED Module
Modular Platform Engine Series

T-Type Gen2

SL-PGR2W53LBWW
SL-PGR2W57MBWW
SL-PGR2W53MBWW

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

Features & Benefits

- High lumen density of 2500 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

Table of Contents

1. Product Code Information

Light Distribution (Optical Lens Type)	Nominal CCT (K)	Product Code
IESNA Type II Medium (L)	5000	SL-PGR2W57MBWW
IESNA Type III Long	5000	SL-PGR2W53LBWW
IESNA Type III Medium (I)	5000	SL-PGR2W53MBWW
Other Available Types:		
IESNA Type I Medium (I)	4000	SL-P7T2W51MBWW
	5000	SL-P7R2W51MBWW
IESNA Type II Medium (I)	4000	SL-P7T2W52MBWW
	5000	SL-P7R2W52MBWW
IESNA Type II Medium (L)	4000	SL-P7T2W57MBWW
	5000	SL-P7R2W57MBWW
IESNA Type II Short (I)	4000	SL-P7T2W52SBWW
	5000	SL-P7R2W52SBWW
IESNA Type III Medium (I)	4000	SL-P7T2W53MBWW
	5000	SL-P7R2W53MBWW
IESNA Type III Long	4000	SL-P7T2W53LBWW
	5000	SL-P7R2W53LBWW
IESNA Type IV Medium (I)	4000	SL-P7T2W54MBWW
	5000	SL-P7R2W54,BWW
IESNA Type V Short (I)	4000	SL-P7T2W55SBWW
	5000	SL-P7R2W55SBWW
Beam Angle 85°	4000	SL-P7T2W585BWW
	5000	SL-P7R2W585BWW

Notes:

1) (I) : optimized for Illuminance uniformity
2) (L) : optimized for Luminance uniformity
3) Luminous flux of IESNA Type IV Medium (I) type is lower than other types

2. Characteristics

a) Maximum Rating

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

※ Ta : Ambient Temperature

b) Electro-optical Characteristics (I_F = 700 mA, t_p = 58 °C)

Item	Unit	Nom. CCT (K)	Min.	Typ.	Max.	Remark
Luminous Flux (Φ_v)	lm	5000	2310	2500	-	IESNA Type III Long, / IESNA Type II Medium (L)
Luminous Efficacy	lm/W	5000	-	119	-	
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		26	30.0	33.0	
Power Consumption (P)	W		-	21	25	@ 30 V, 700mA in a module

Notes:

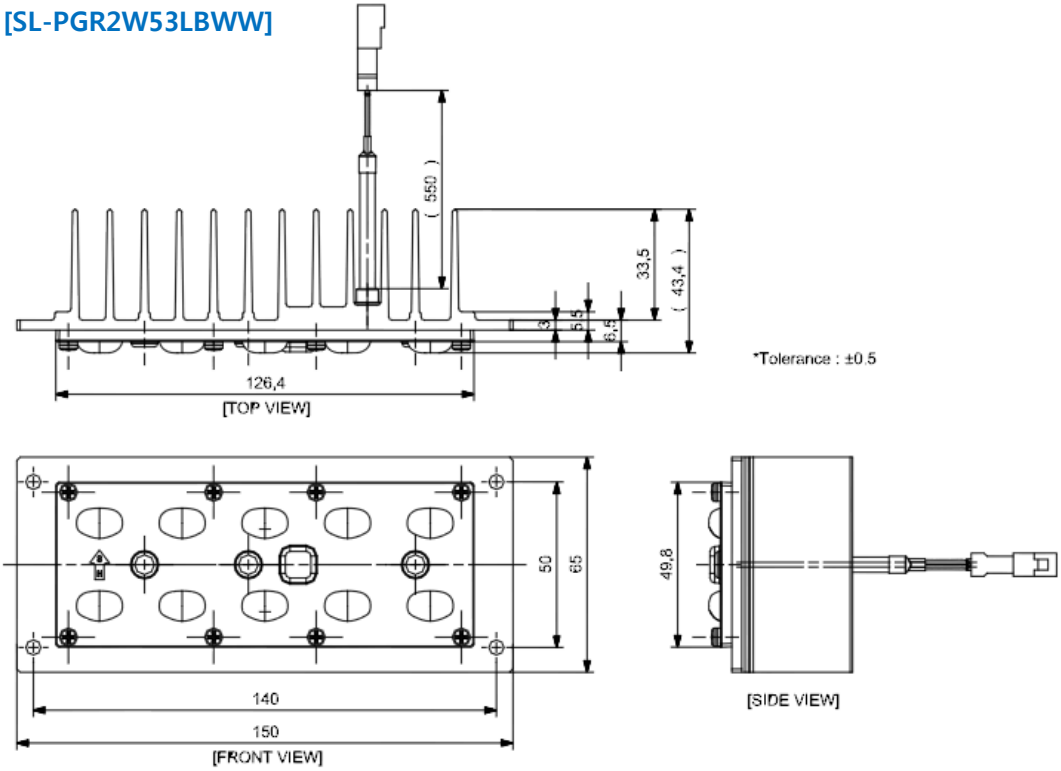
1) T_C: Case temperature, measured at "**Tc point**" and at the rated typical DC current
2) Samsung maintains measurement tolerance of

   : luminous flux = ±7 %, CRI = ±1, voltage = ±5%, CCT = ±5%, Current = ±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

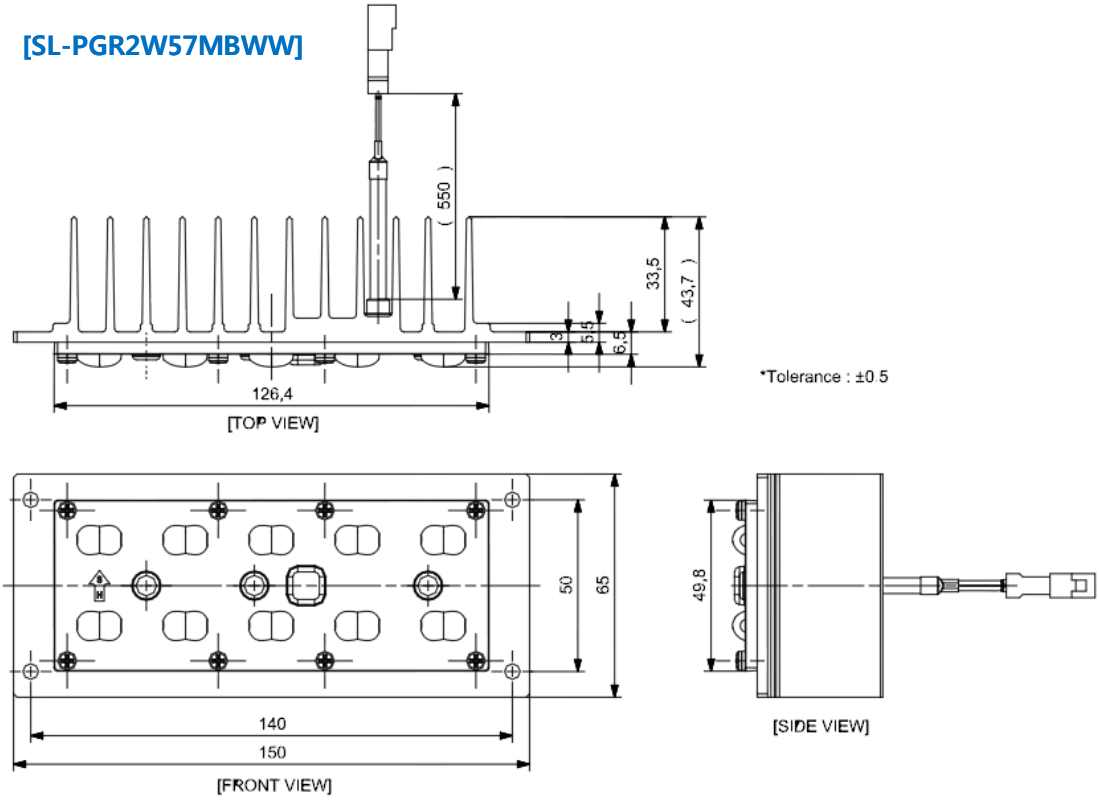
3. Structure & Assembly

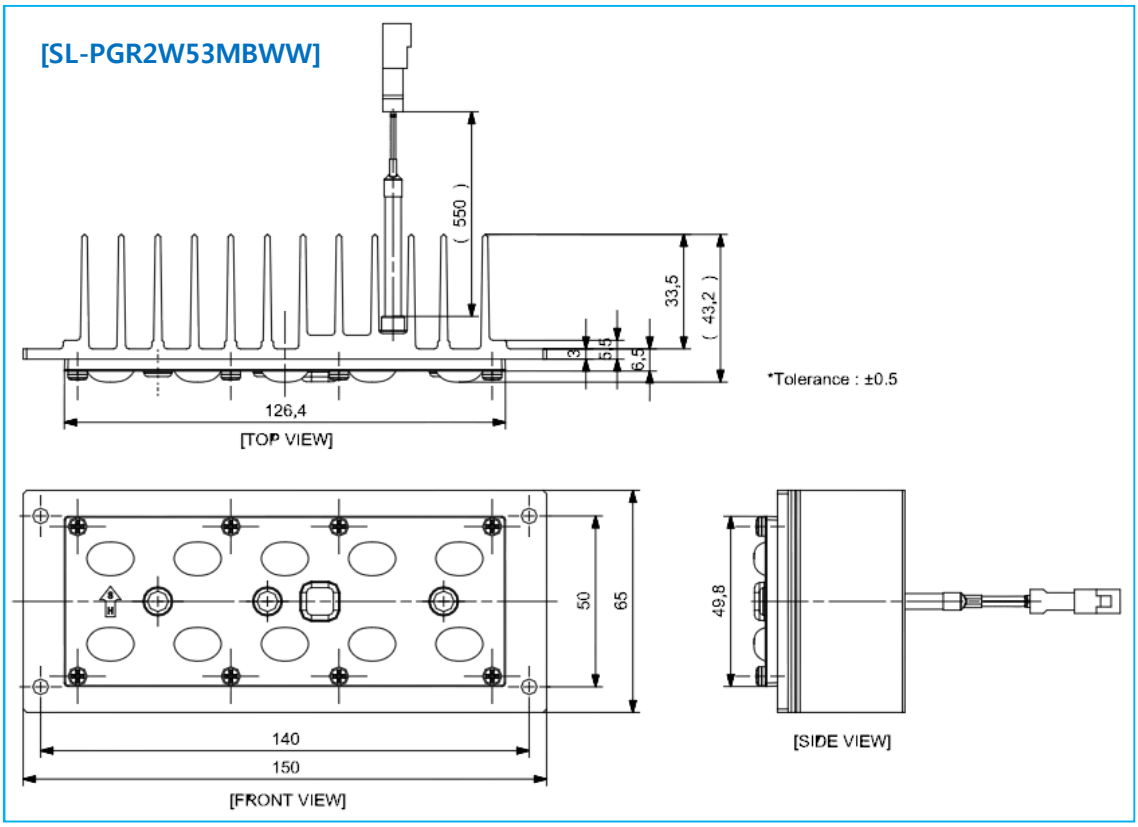
a) Appearance

[SL-PGR2W53LBWW]



[SL-PGR2W57MBWW]





Note:

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

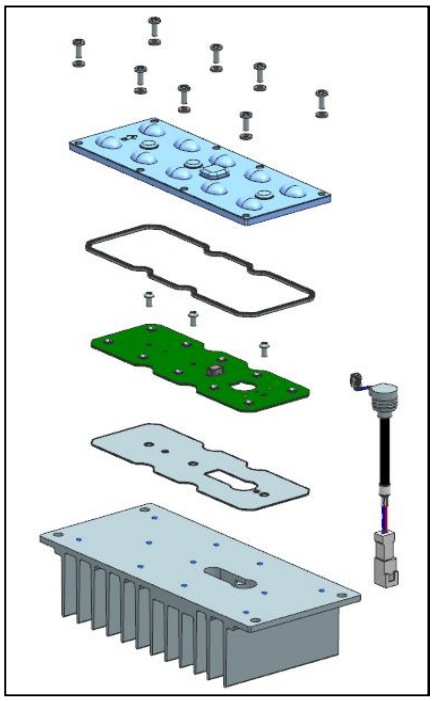
Critical dimensions are the same for all optical solutions, except for thickness difference at the core lens cross-section.

b) Dimension

Model	Dimension	Specification	Tolerance	Unit	Remark
SL-PGR2W53LBWW	Module Length	150	±0.5	mm	IESNA Type III Long,
	Module Width	60	±0.5	mm	
	Module Height	43.4	±0.5	mm	
	PCB Thickness	1.2	±0.12	mm	
	Module Weight	295	±20	g	
SL-PGR2W57MBWW	Module Length	150	±0.5	mm	IESNA Type II Medium (L)
	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	
SL-PGR2W53MBWW	Module Length	150	±0.5	mm	IESNA Type III Medium (I)
	Module Width	60	±0.5	mm	
	Module Height	43.2	±0.5	mm	
	PCB Thickness	1.2	±0.12	mm	
	Module Weight	295	±20	g	

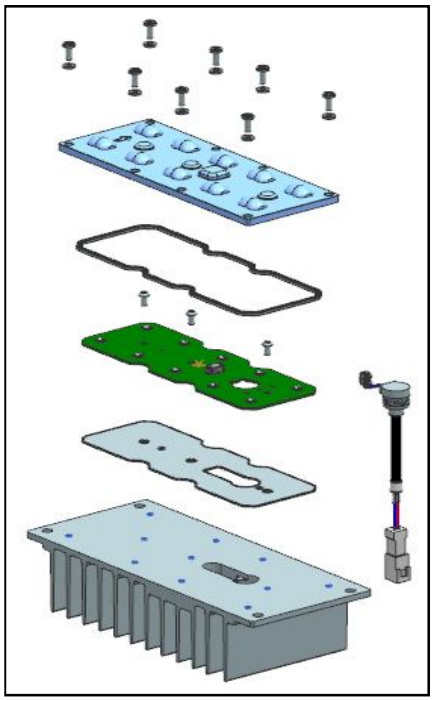
c) Structure

[SL-PGR2W53LBWW]



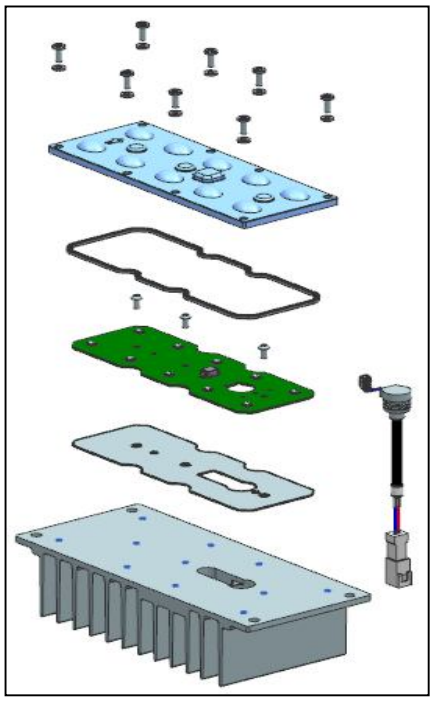
No.	Parts	Specifications
1.	Lens cover screws (8 pcs)	Material: Stainless steel with teflon washer Location: Between array lens cover and base plate heat sink
.	Array lens cover	Lens type: IESNA Type III Long Material: Polycarbonate Thickness: 2.0 mm UL-94 Flammability: V-2
3.	Rubber seal	Material: Molded silicone
4.	LED board	LED: LH351B Ceramic high flux rank (10 pcs) Material: MC-PCB, aluminum Thickness: 1.2 mm Screws: Stainless steel (3 pcs)
5.	Side inlet harness	Material: Molded PVC coated with silicone sealant, 105 °C rating Wires: 24 AWG, 105 °C rating, without end connector Length (wires): 550 mm
6.	Thermal pad	Between PCB and base plate heat sink
7.	Base plate heat sink	Material: Extrusion aluminum

[SL-PGR2W57MBWW]



No.	Parts	Specifications
1.	Lens cover screws (8 pcs)	Material: Stainless steel with teflon washer Location: Between array lens cover and base plate heat sink
.	Array lens cover	Lens type : IESNA Type II Medium(L) Material: Polycarbonate Thickness: 2.0 mm UL-94 Flammability: V-2
3.	Rubber seal	Material: Molded silicone
4.	LED board	LED: LH351B Ceramic high flux rank (10 pcs) Material: MC-PCB, aluminum Thickness: 1.2 mm Screws: Stainless steel (3 pcs)
5.	Side inlet harness	Material: Molded PVC coated with silicone sealant, 105 °C rating Wires: 24 AWG, 105 °C rating, without end connector Length (wires): 550 mm
6.	Thermal pad	Between PCB and base plate heat sink
7.	Base plate heat sink	Material: Extrusion aluminum

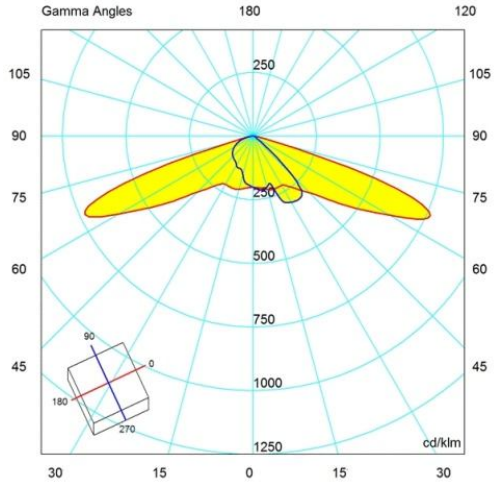
[SL-PGR2W53MBWW]

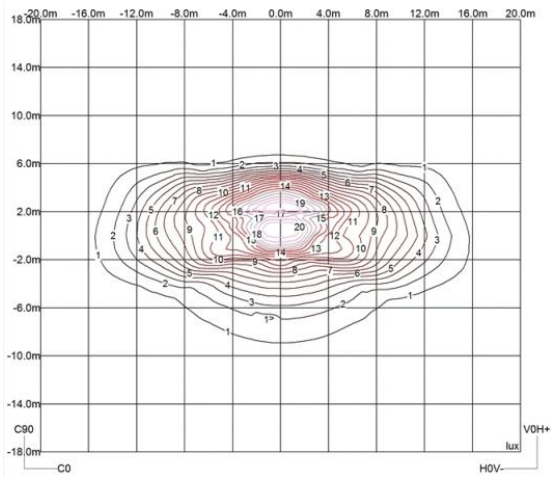


No.	Parts	Specifications
1.	Lens cover screws (8 pcs)	Material: Stainless steel with teflon washer Location: Between array lens cover and base plate heat sink
.	Array lens cover	Lens type : IESNA Type III Medium(I) Material: Polycarbonate Thickness: 2.0 mm UL-94 Flammability: V-2
3.	Rubber seal	Material: Molded silicone
4.	LED board	LED: LH351B Ceramic high flux rank (10 pcs) Material: MC-PCB, aluminum Thickness: 1.2 mm Screws: Stainless steel (3 pcs)
5.	Side inlet harness	Material: Molded PVC coated with silicone sealant, 105 °C rating Wires: 24 AWG, 105 °C rating, without end connector Length (wires): 550 mm
6.	Thermal pad	Between PCB and base plate heat sink
7.	Base plate heat sink	Material: Extrusion aluminum

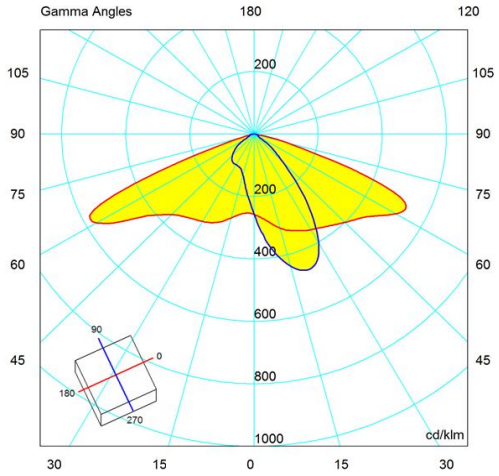
d) Light Distribution

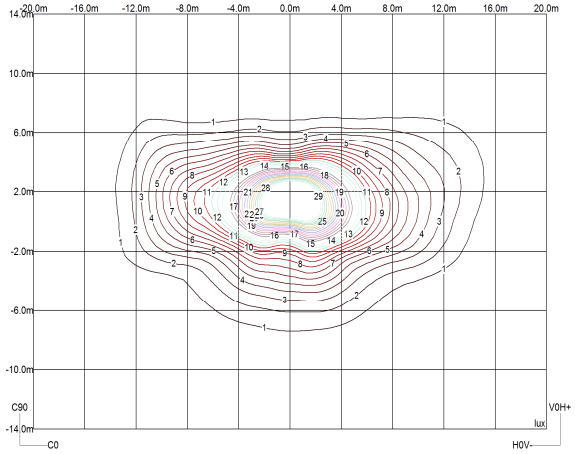
IESNA Type III Long Lens Type



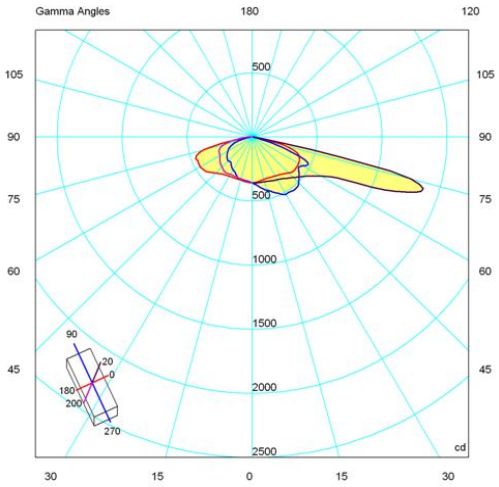


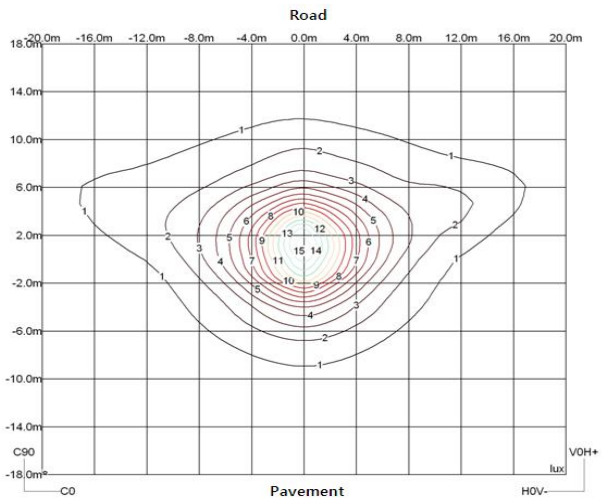
IESNA Type II Medium(L) Lens Type





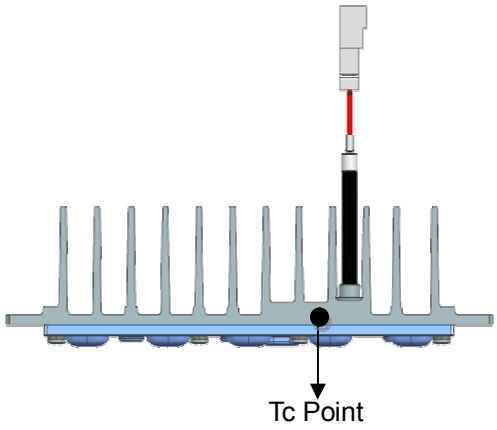
IESNA Type III Medium(l) Lens Type





e) Thermal Management

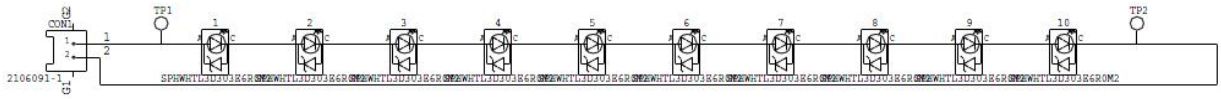
Performance temperatures are measured on "**Tc point**" as indicated below (located at long side-center of the Module):



※Tc : case temperature

※ Recommended Tc points as a function of number of modules are described in Thermal Application Notes.
※ Tc should be measured with recommended Heatshik

g) Schematic Circuit

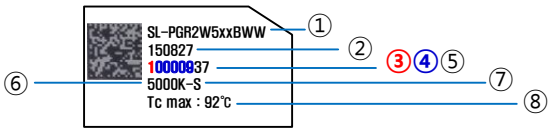


4. Certification & Declaration

Item	Compliant to	Remark
Declaration	RoHS	Hazardous Substance & Material

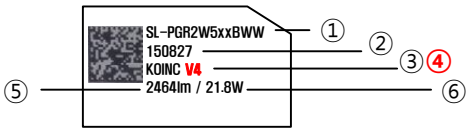
5. Label Structure

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℃

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	-

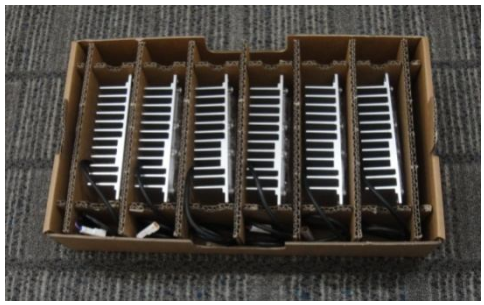
c) Outer Box Label

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

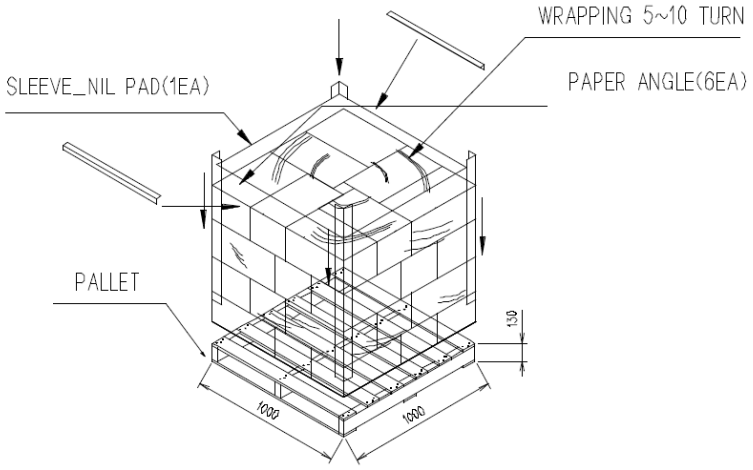
Packing Process

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.

About Samsung Electronics Co., Ltd.

Samsung Electronics Co., Ltd. is a global leader in technology, opening new possibilities for people everywhere. Through relentless innovation and discovery, we are transforming the worlds of TVs, smartphones, tablets, PCs, cameras, home appliances, printers, LTE systems, medical devices, semiconductors and LED solutions. We employ 286,000 people across 80 countries with annual sales of US$216.7 billion. To discover more, please visit www.samsungled.com.

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