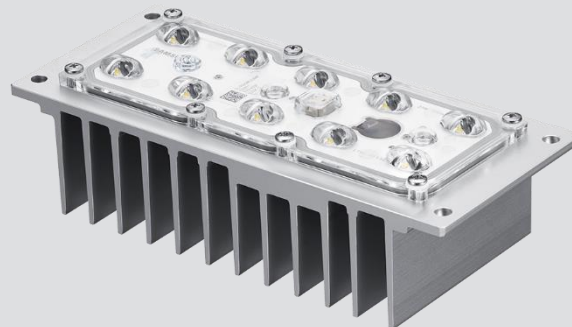LED Module
Modular Platform Engine Series

T-Type Gen2

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

Features & Benefits

- High lumen density of 2850 lm (5000K)
- Seamless combination by modular design
- Lens-type module, that makes fixtures easily designed
- IP66 for durability and robustness
- Risk Group 1 (3000K)

Applications

Outdoor Lighting:

- Roadway Light
- Street Light
- Parking Lot
- Tunnel Light
- Flood Light
- Canopy Light

SAMSUNG

Table of Contents

1. Product Code Information

Light Distribution (Optical Lens Type)	Nominal CCT (K)	Product Code	Remark
IESNA Type II Medium	3000	SL-P7V2W52MBWW	
	4000	SL-P7T2W52MBWW	
	5000	SL-P7R2W52MBWW	
IESNA Type V	3000	SL-P7V2W55SBWW	
	4000	SL-P7T2W55SBWW	
	5000	SL-P7R2W55SBWW	

2. Characteristics

a) Maximum Rating

Item	Rating	Unit	Remark
Rated Lifetime	>50,000	hour	L80B50 @ $t_{p, 50}$ = 105 ºC
Ingress Protection (IP)	IP66	-	For Damp Location (UL marking)
Operating Temperature (T_c)	10 ~ 92	ºC	
Ambient Operating Temperature	-40 ~ 70	ºC	
Storage Temperature (T_a)	-30 ~ +70	ºC	
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)	CRI (Ra)	Min.	Typ.	Max.	Remark
Luminous Flux (Φ_v)	lm	3000	70	2450	2650	-	
		4000	70	2500	2800	-	
		5000	70	2500	2850	-	
Luminous Efficacy	lm/W	3000	70	-	128		
		4000	70		135		
		5000	70		136		
CCT	K	3000	70	2600	3000	3300	
		4000	70	3600	4000	4300	
		5000	70	4600	5000	5350	
Color Rendering Index (Ra)	-	3000	70	70	-	-	
		4000	70	70	-	-	
		5000	70	70	-	-	
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 & Assembly4
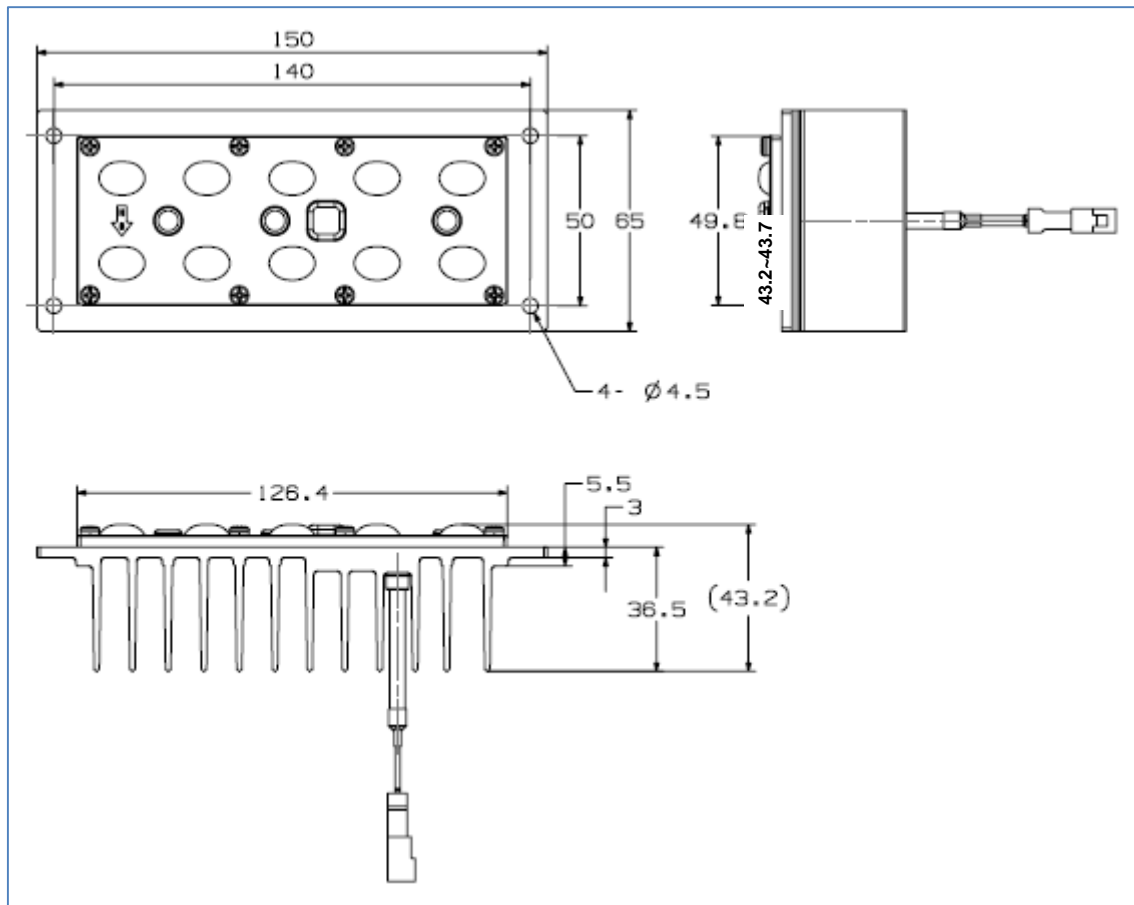
a) Appearance

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

| Model	Dimension	Specification	Tolerance	Unit	Remark
T type Gen2	Module Length	150	±0.5	mm	Module heights differ from lens to lens
	Module Width	65	±0.5	mm	
	Module Height	43.2~43.7	±0.5	mm	
	PCB Thickness	1.2	±0.12	mm	
	Module Weight	295	±20	g	

c) Structure
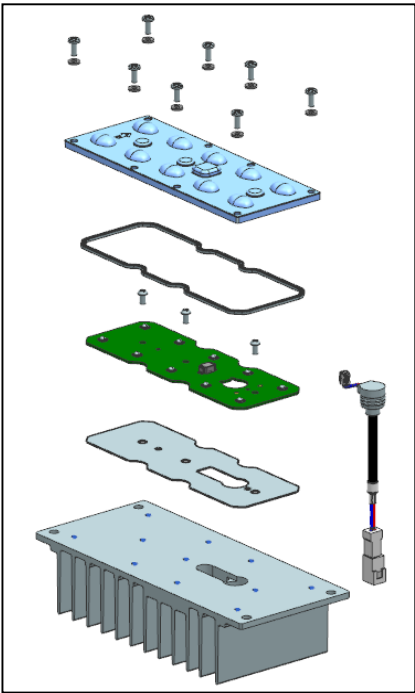
No.	Parts	Specifications
1.	Lens cover screws (8 pcs)	Material: Stainless steel with teflon washer Location: Between array lens cover and base plate heat sink
.	Array lens cover	Material: Polycarbonate Thickness: 2.0 mm UL-94 Flammability: V-2
3.	Rubber seal	Material: Molded silicone
4.	LED board	LED: 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, with 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

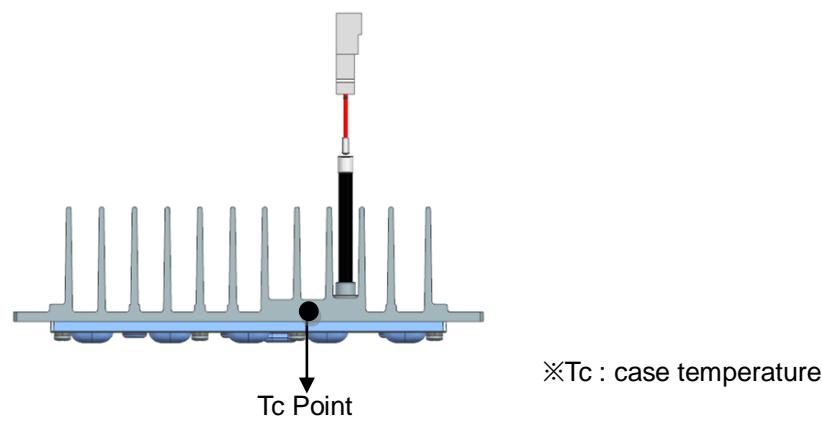### IESNA Type II Medium Lens Type (2M)
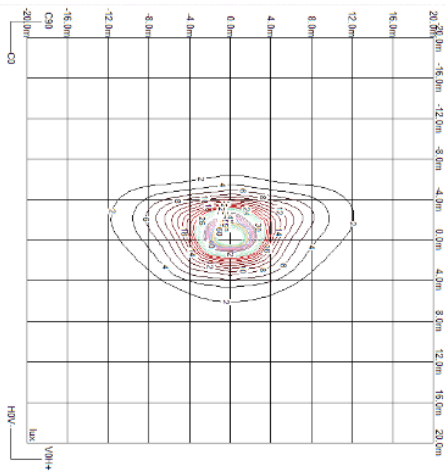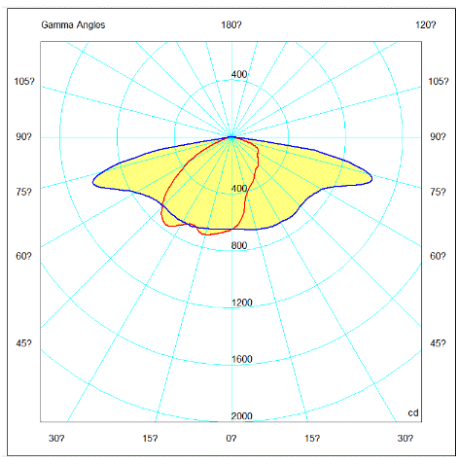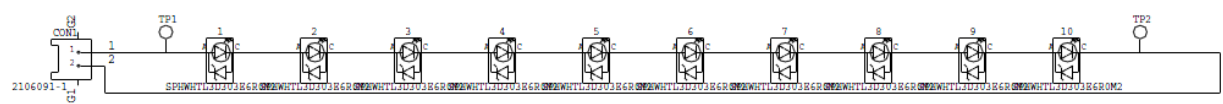

IESNA Type 5 Lens Type (5S)
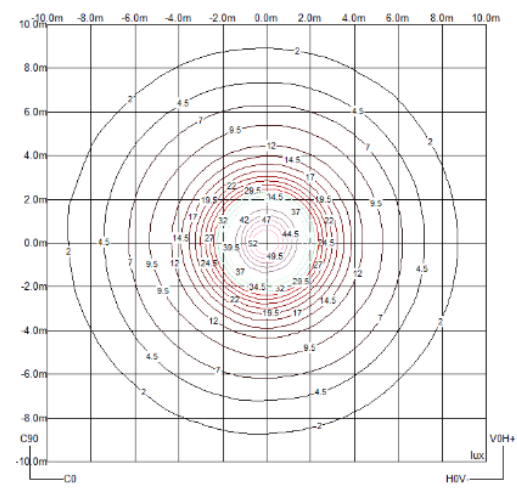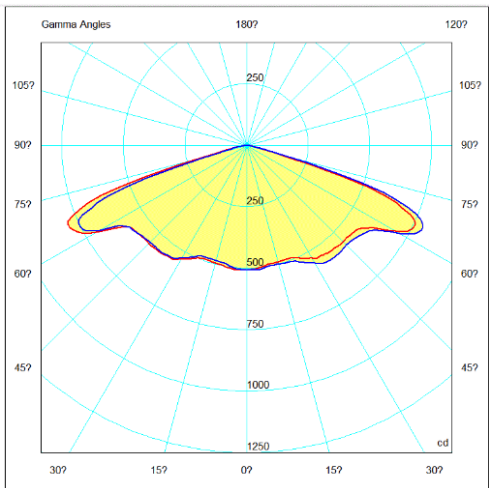
e) Thermal Management

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

Tc Point

※Tc : case temperature

g) Schematic Circuit

4. Certification & Declaration

| Item	Compliant to	Remark
Declaration	RoHS	Hazardous Substance & Material
Certification	UL	Certification No. : 20160325-E344519
	CE	DoC No. : DOC13-SW001-1601M01

5. Label Structure

a) LED Board Label
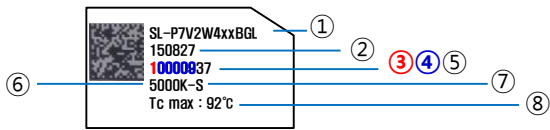
Number	Item	Description
①	Model Number (Product Code)	Refer to page 3
②	SMT Date Code	-
③	SMT Line	-
④	Serial Number	00001 ~ 99999
⑤	LED Binning Code	-
⑥	CCT	5000 K
⑦	LED Maker	S : Samsung
⑧	Tc max	92℃

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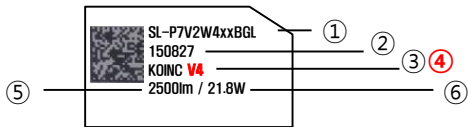
Number	Item	Description
①	Model Number (Product Code)	Refer to page 3
②	Production Date Code	-
③	Manufacturing Location	KO (Country / Korea) + INC (Factory)
④	Vf Binning Code	-
⑤	Luminous Flux	-
⑥	Operating Wattage	-

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) + Suffix (2)
③	Packing Quantity	12 pc
④	Production Date (year.month.date)	yyyy.mm.dd
⑤	Country of Origin	KOREA
⑥	Vf Binning Code	-

[Vf Bining Table]

Bin Code	Range(V)	Bin Code	Range(V)
VG	VG < 26.50	V1	29.50 ≤ V1 < 30.00
VE	26.50 ≤ VE < 27.00	V2	30.00 ≤ V2 < 30.50
VD	27.00 ≤ VD < 27.50	V3	30.50 ≤ V3 < 31.00
VC	27.50 ≤ VC < 28.00	V4	31.00 ≤ V4 < 31.50
VB	28.00 ≤ VB < 28.50	V5	31.50 ≤ V5 < 32.00
VA	28.50 ≤ VA < 29.00	V6	32.00 ≤ V6 < 32.50
V0	29.00 ≤ V0 < 29.50	V7	32.50 ≤ V7

※ Initial voltage of module is measured at last stage of assembly to sort the module's voltage-level. Initial voltage of module is not match with the aging voltage of module and Vf tolerance of our voltage-meter is ±0.5%. Bin Code is printed on the module and box label.It is recommended to use same Vf bin or within 1-bin different modules to make a set of our modules. For example, it is recommended to use 2ea "VA bin" modules or 1ea "VA bin" & 1ea "V0 bin" modules if you want to make a set using our 2ea modules.
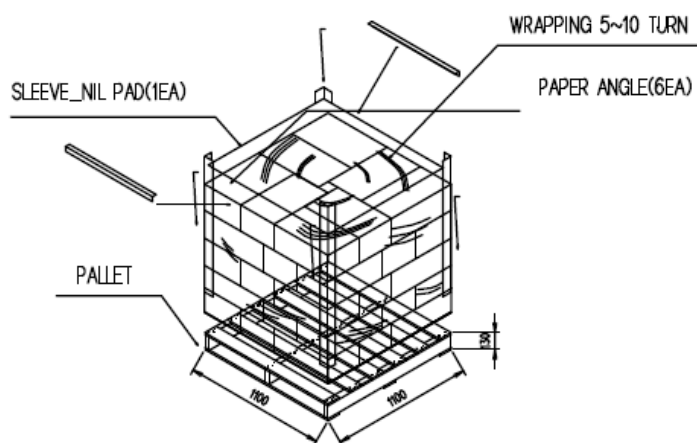
6. Packing Structure

Packing Process

Step 1: 6 Modules of the same voltage bin are placed inside a stack:

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

Step 3: 40 boxes (480 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 stacks)	419	240	171	±5
Pallet	480 (40 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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