

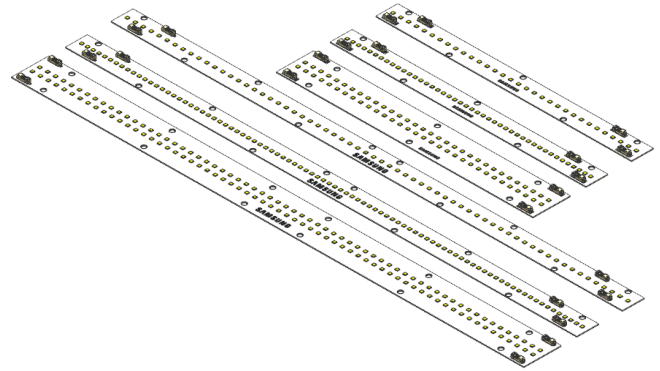


# THE DATASHEET OF SL-B8R1N60LAWW



## LED Module

# H inFlux



### Features & Benefits

- Excellent solution for highbay, lowbay and high mounted fixtures
- Very high efficacy delivery around 190lm/W @ 4000K,  $t_p=55^{\circ}\text{C}$
- Additional LED protection effort
- Wide lumen flux coverage up to 40,000lm through module combination
- Easy thermal management by flip-chip MPL designed by Samsung

### Applications

- Industrial lighting : warehouse, plant, parking lot etc.
- High ceiling indoor : building lobby etc



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## 1. Product Code Information

### a-1) H inFlux\_S

	Item	Product Code
S02	3000K / Ra80	SL-B8V1N30LAWW
	3500K / Ra80	SL-B8U1N30LAWW
	4000K / Ra80	SL-B8T1N30LAWW
	5000K / Ra80	SL-B8R1N30LAWW
S03	3000K / Ra80	SL-B8V1N60LAWW
	3500K / Ra80	SL-B8U1N60LAWW
	4000K / Ra80	SL-B8T1N60LAWW
	5000K / Ra80	SL-B8R1N60LAWW
S04	3000K / Ra80	SL-B8V2N70LAWW
	3500K / Ra80	SL-B8U2N70LAWW
	4000K / Ra80	SL-B8T2N70LAWW
	5000K / Ra80	SL-B8R2N70LAWW

## a-2) H inFlux\_L

	Item	Product Code
L04	3000K / Ra80	SL-B8V2N80LAWW
	3500K / Ra80	SL-B8U2N80LAWW
	4000K / Ra80	SL-B8T2N80LAWW
	5000K / Ra80	SL-B8R2N80LAWW
L06	3000K / Ra80	SL-B8V3N80LAWW
	3500K / Ra80	SL-B8U3N80LAWW
	4000K / Ra80	SL-B8T3N80LAWW
	5000K / Ra80	SL-B8R3N80LAWW
L09	3000K / Ra80	SL-B8V4N90LAWW
	3500K / Ra80	SL-B8U4N90LAWW
	4000K / Ra80	SL-B8T4N90LAWW
	5000K / Ra80	SL-B8R4N90LAWW

## 2. Characteristics

(S02 : If 1,000mA , S03 : If 1,430mA , S04 : If 1,000mA tp 55°C)

(L04 : If 1,000mA , L06 : If 1,430mA , L09 : If 1,000mA tp 55°C)

### a) Basic Information

Item	Unit	Rating	Remark
Rated Lifetime	Hour	>50,000	L70B50
Ingress Protection (IP)	-	no rating	
Ambient / Operating Temperature (t <sub>a</sub> )	°C	-40 ~ +50	
Storage Temperature	°C	-40 ~ +85	
Working voltage for insulation	V	50	
Max pass-through current	A	3	
ESD	V	4,000 (Contact)	IEC61000-4-2
		8,000 (Air)	

#### Notes

※ tp: temperature at which performance is specified measured at "Tc point".

## b) Electro-Optical Characteristics

### b-1) H inFlux\_S02

Item	Unit	Rating			Remark	
		min	typ	max		
Luminous Flux	lm	3000K	1,780	1,980	2,180	If = 1,000 mA tp = 55 °C
		3500K	1,820	2,030	2,240	
		4000K	1,920	2,140	2,360	
		5000K	1,980	2,200	2,420	
Luminous Efficacy	lm/W	3000K	160	178	197	
		3500K	163	183	202	
		4000K	172	193	213	
		5000K	178	198	218	
Operating Voltage	V	10.0	11.1	13.0		
Power Consumption	W	10.0	11.1	13.0		
Color Rendering Index (Ra)	-	80				
Operating Current	mA	-	1,000	1,600		

### b-2) H inFlux\_S03

Item	Unit	Rating			Remark	
		min	typ	max		
Luminous Flux	lm	3000K	2,530	2,820	3,110	If = 1,430 mA tp = 55 °C
		3500K	2,600	2,890	3,180	
		4000K	2,750	3,060	3,370	
		5000K	2,825	3,140	3,455	
Luminous Efficacy	lm/W	3000K	158	176	195	
		3500K	162	181	199	
		4000K	171	191	211	
		5000K	176	196	216	
Operating Voltage	V	10.0	11.2	13.0		
Power Consumption	W	14.0	16.0	19.0		
Color Rendering Index (Ra)	-	80				
Operating Current	mA	-	1,430	2,200		

#### Notes

- ※ Operating current tolerance may be ±5%.
- ※ tp: temperature at which performance is specified measured at "Tc point".
- ※ Samsung maintains a measurement tolerance of Luminous flux ±7% , Ra ±3.0 , Voltage ±5%.

## b-3) H inFlux\_S04

Item	Unit	Rating			Remark	
		min	typ	max		
Luminous Flux	lm	3000K	3,560	3,960	4,360	If = 1,000 mA tp = 55 °C
		3500K	3,650	4,060	4,470	
		4000K	3,850	4,280	4,710	
		5000K	3,960	4,400	4,840	
Luminous Efficacy	lm/W	3000K	159	178	196	
		3500K	163	182	201	
		4000K	172	192	212	
		5000K	178	197	217	
Operating Voltage	V	20.0	22.3	25.0		
Power Consumption	W	20.0	22.3	25.0		
Color Rendering Index (Ra)	-	80				
Operating Current	mA	-	1,000	1,600		

## b-4) H inFlux\_L04

Item	Unit	Rating			Remark	
		min	typ	max		
Luminous Flux	lm	3000K	3,560	3,960	4,360	If = 1,000 mA tp = 55 °C
		3500K	3,650	4,060	4,470	
		4000K	3,850	4,280	4,710	
		5000K	3,960	4,400	4,840	
Luminous Efficacy	lm/W	3000K	159	178	196	
		3500K	163	182	201	
		4000K	172	192	212	
		5000K	178	197	217	
Operating Voltage	V	20.0	22.3	25.0		
Power Consumption	W	20.0	22.3	25.0		
Color Rendering Index (Ra)	-	80				
Operating Current	mA	-	1,000	1,600		

## Notes

- ※ Operating current tolerance may be  $\pm 5\%$ .
- ※ tp: temperature at which performance is specified measured at "Tc point".
- ※ Samsung maintains a measurement tolerance of Luminous flux  $\pm 7\%$ , Ra  $\pm 3.0$ , Voltage  $\pm 5\%$ .

## b-5) H inFlux\_L06

Item	Unit	Rating			Remark	
		min	typ	max		
Luminous Flux	lm	3000K	5,060	5,630	6,200	If = 1,430 mA tp = 55 °C
		3500K	5,220	5,800	6,380	
		4000K	5,490	6,110	6,730	
		5000K	5,670	6,300	6,930	
Luminous Efficacy	lm/W	3000K	158	176	194	
		3500K	163	181	200	
		4000K	171	191	211	
		5000K	177	197	216	
Operating Voltage	V	20.0	22.4	25.0		
Power Consumption	W	28.0	32.0	36.0		
Color Rendering Index (Ra)	-	80				
Operating Current	mA	-	1,430	2,200		

## b-6) H inFlux\_L09

Item	Unit	Rating			Remark	
		min	typ	max		
Luminous Flux	lm	3000K	7,110	7,910	8,710	If = 1,000 mA tp = 55 °C
		3500K	7,310	8,130	8,950	
		4000K	7,710	8,570	9,430	
		5000K	7,875	8,750	9,625	
Luminous Efficacy	lm/W	3000K	159	177	196	
		3500K	163	182	201	
		4000K	172	192	212	
		5000K	177	196	216	
Operating Voltage	V	41.0	44.6	49.0		
Power Consumption	W	41.0	44.6	49.0		
Color Rendering Index (Ra)	-	80				
Operating Current	mA	-	1,000	1,600		

## Notes

- ※ Operating current tolerance may be  $\pm 5\%$ .
- ※ tp: temperature at which performance is specified measured at "Tc point".
- ※ Samsung maintains a measurement tolerance of Luminous flux  $\pm 7\%$ , Ra  $\pm 3.0$ , Voltage  $\pm 5\%$ .

## c) Color coordinate

Model	Nom. CCT (K)	CIE 1931 Chromaticity Coordinates				Remark	
S02	3000	CIE x	0.4323	0.4252	0.4378	0.4453	If = 1,000 mA tp = 25 °C
		CIE y	0.4064	0.3911	0.3956	0.4111	
		Center	CIE x	0.4352	CIE y	0.4011	
	3500	CIE x	0.4050	0.3994	0.4128	0.4189	
		CIE y	0.3942	0.3791	0.3856	0.4010	
		Center	CIE x	0.4090	CIE y	0.3900	
	4000	CIE x	0.3788	0.3750	0.3872	0.3916	
		CIE y	0.3802	0.3656	0.3730	0.3880	
		Center	CIE x	0.3832	CIE y	0.3767	
	5000	CIE x	0.3394	0.3386	0.3484	0.3496	
		CIE y	0.3525	0.3407	0.3485	0.3607	
		Center	CIE x	0.3440	CIE y	0.3506	
S03	3000	CIE x	0.4323	0.4252	0.4378	0.4454	If = 1,430 mA tp = 25 °C
		CIE y	0.4064	0.3912	0.3956	0.4112	
		Center	CIE x	0.4352	CIE y	0.4011	
	3500	CIE x	0.4054	0.3998	0.4131	0.4192	
		CIE y	0.3946	0.3795	0.3859	0.4013	
		Center	CIE x	0.4094	CIE y	0.3903	
	4000	CIE x	0.3789	0.3751	0.3872	0.3917	
		CIE y	0.3803	0.3656	0.3731	0.3881	
		Center	CIE x	0.3832	CIE y	0.3768	
	5000	CIE x	0.3395	0.3386	0.3485	0.3497	
		CIE y	0.3528	0.3410	0.3488	0.3610	
		Center	CIE x	0.3441	CIE y	0.3509	

## Notes

Samsung maintains a measurement tolerance of CIE\_x / CIE\_y  $\pm$  0.005

Model	Nom. CCT (K)	CIE 1931 Chromaticity Coordinates				Remark			
S04	3000	CIE x	0.4321	0.4250	0.4376	0.4452	If = 1,000 mA tp = 25 °C		
		CIE y	0.4063	0.3911	0.3955	0.4111			
		Center	CIE x	0.4350	CIE y	0.4010			
	3500	CIE x	0.4051	0.3995	0.4128	0.4189			
		CIE y	0.3944	0.3793	0.3857	0.4011			
		Center	CIE x	0.4091	CIE y	0.3901			
	4000	CIE x	0.3793	0.3755	0.3877	0.3921			
		CIE y	0.3812	0.3666	0.3740	0.3890			
		Center	CIE x	0.3837	CIE y	0.3777			
	5000	CIE x	0.3397	0.3388	0.3487	0.3499			
		CIE y	0.3530	0.3412	0.3490	0.3613			
		Center	CIE x	0.3443	CIE y	0.3511			
	L04	3000	CIE x	0.4323	0.4252	0.4378		0.4454	If = 1,000 mA tp = 25 °C
			CIE y	0.4064	0.3911	0.3956		0.4111	
			Center	CIE x	0.4352	CIE y		0.4010	
3500		CIE x	0.4049	0.3993	0.4126	0.4187			
		CIE y	0.3942	0.3791	0.3856	0.4010			
		Center	CIE x	0.4089	CIE y	0.3900			
4000		CIE x	0.3790	0.3752	0.3874	0.3918			
		CIE y	0.3807	0.3660	0.3735	0.3885			
		Center	CIE x	0.3834	CIE y	0.3772			
5000		CIE x	0.3414	0.3406	0.3504	0.3516			
		CIE y	0.3548	0.3430	0.3508	0.3631			
		Center	CIE x	0.3460	CIE y	0.3529			

## Notes

Samsung maintains a measurement tolerance of CIE\_x / CIE\_y  $\pm$  0.005

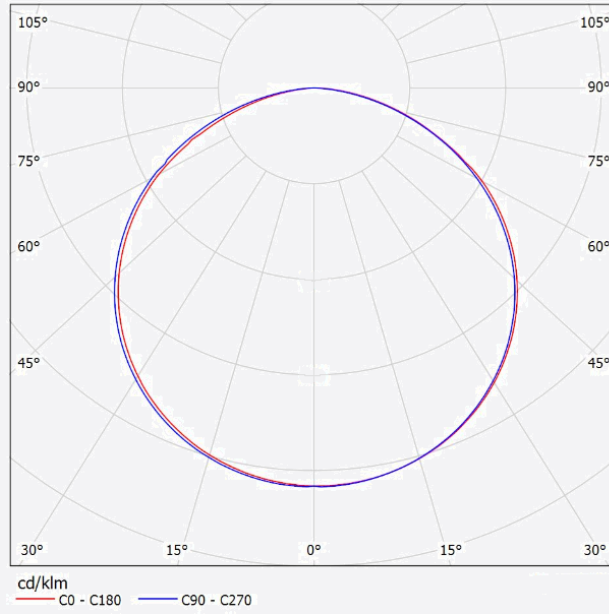
Model	Nom. CCT (K)	CIE 1931 Chromaticity Coordinates				Remark			
L06	3000	CIE x	0.4321	0.4250	0.4376	0.4451	If = 1,430 mA tp = 25 °C		
		CIE y	0.4063	0.3910	0.3955	0.4110			
		Center	CIE x	0.4350	CIE y	0.4009			
	3500	CIE x	0.4052	0.3996	0.4130	0.4191			
		CIE y	0.3942	0.3791	0.3856	0.4010			
		Center	CIE x	0.4092	CIE y	0.3900			
	4000	CIE x	0.3791	0.3753	0.3874	0.3919			
		CIE y	0.3806	0.3659	0.3734	0.3884			
		Center	CIE x	0.3834	CIE y	0.3771			
	5000	CIE x	0.3399	0.3391	0.3489	0.3501			
		CIE y	0.3530	0.3412	0.3490	0.3613			
		Center	CIE x	0.3445	CIE y	0.3511			
	L09	3000	CIE x	0.4321	0.4250	0.4375		0.4451	If = 1,000 mA tp = 25 °C
			CIE y	0.4060	0.3907	0.3952		0.4107	
			Center	CIE x	0.4349	CIE y		0.4007	
3500		CIE x	0.4051	0.3995	0.4129	0.4189			
		CIE y	0.3942	0.3791	0.3855	0.4009			
		Center	CIE x	0.4091	CIE y	0.3899			
4000		CIE x	0.3793	0.3755	0.3876	0.3920			
		CIE y	0.3808	0.3661	0.3736	0.3886			
		Center	CIE x	0.3836	CIE y	0.3773			
5000		CIE x	0.3397	0.3389	0.3487	0.3499			
		CIE y	0.3530	0.3412	0.3490	0.3613			
		Center	CIE x	0.3443	CIE y	0.3511			

## Notes

Samsung maintains a measurement tolerance of CIE\_x / CIE\_y  $\pm$  0.005

d) Light Distribution (All)

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



### e) Temperature Characteristics

Item	Unit	Nominal*	Life**	Max*** (tc)
Temperature Case (Tc)	°C	55	80	90

Notes:

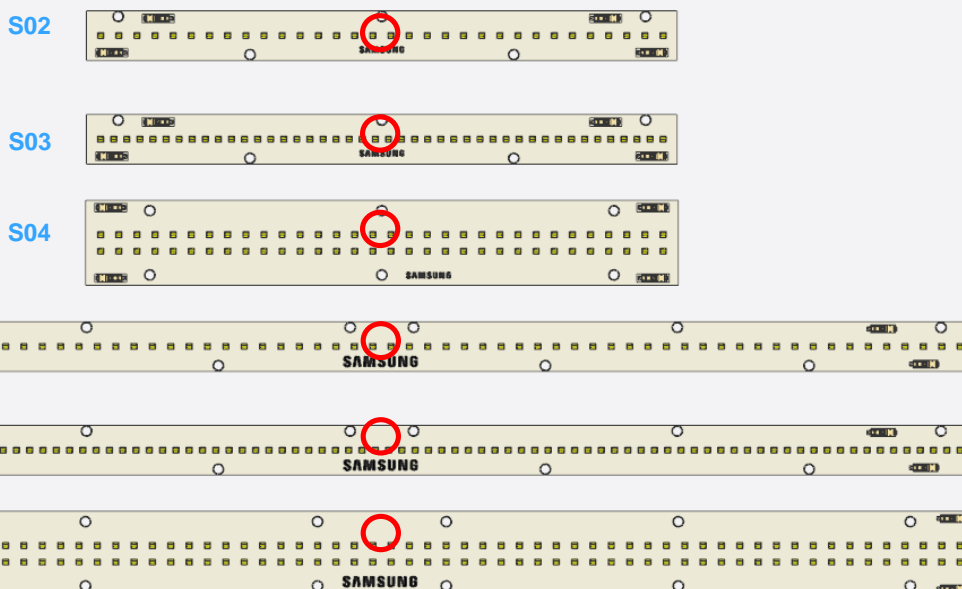
- \* Temperature used to specify performance of the module (tp).
- \*\* Rated maximum performance temperature at which lifetime is specified (??).
- \*\*\* Rated maximum temperature, highest permissible temperature to avoid safety risk (tc).

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

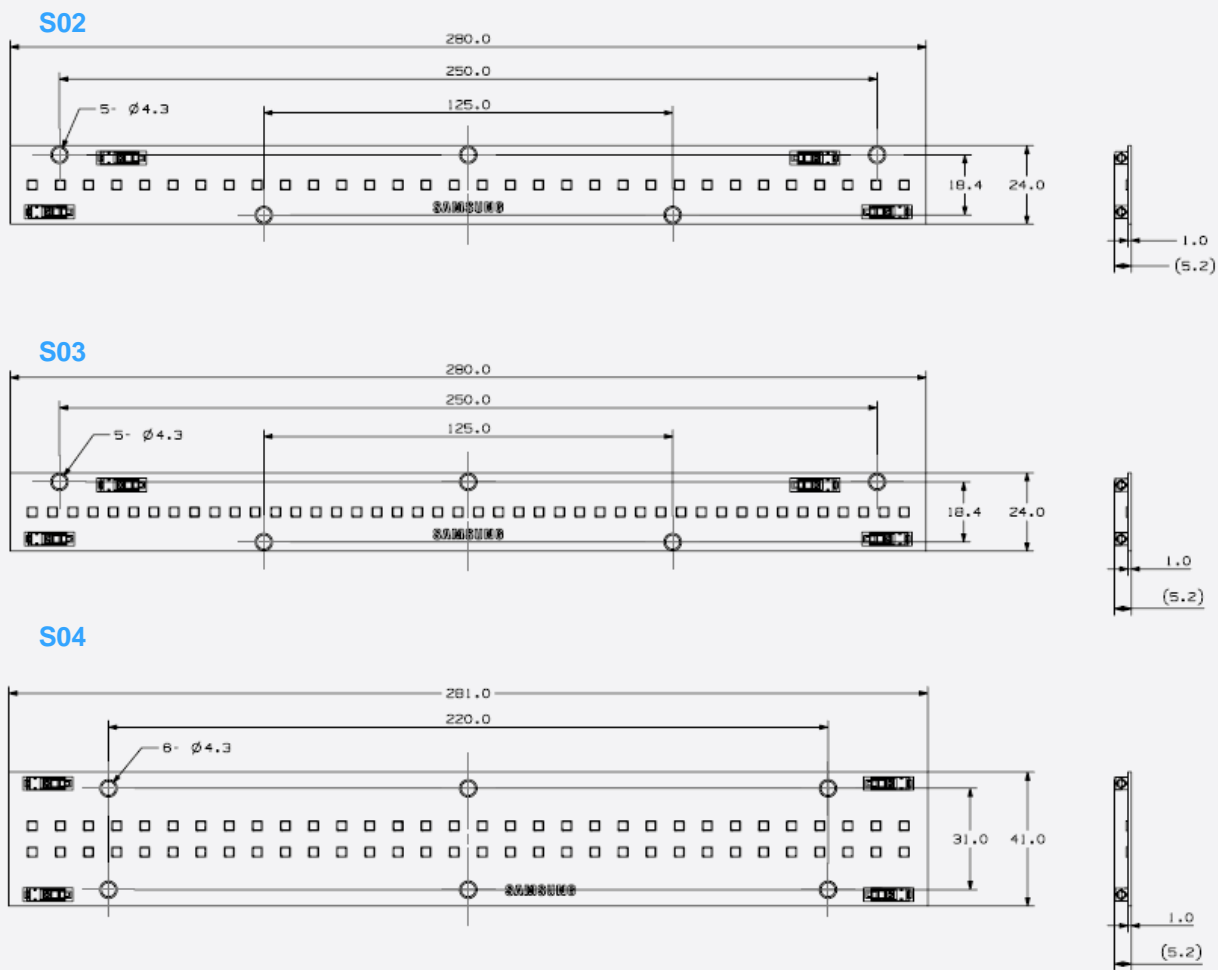
Performance temperatures are measured on "Tc point" as indicated on the module.



### 3. Structure & Assembly

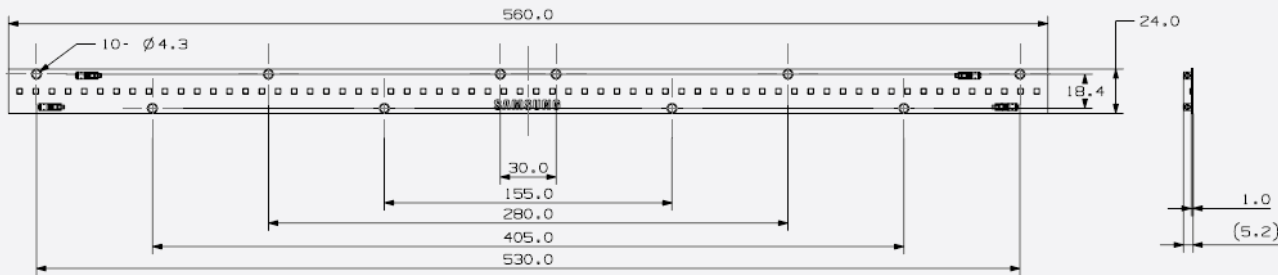
#### a) Appearance & Dimension

##### a-1) H inFlux S

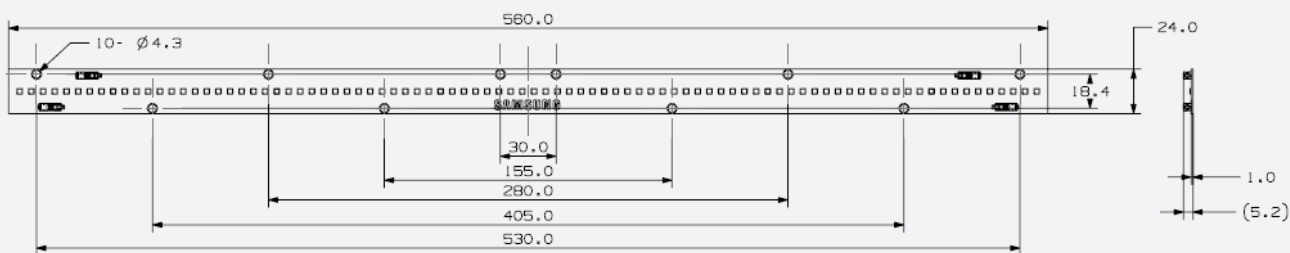


a-2) H inFlux L

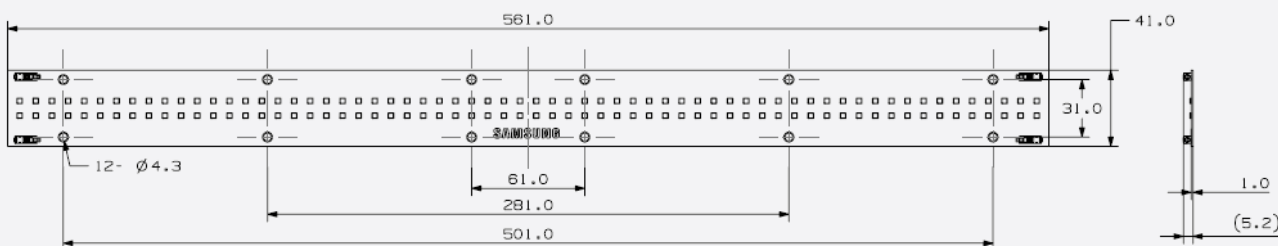
L04



L06



L09




## b) Dimension

	Item	Unit	Dimension	Tolerance
Module Diameter	H influx_S02 / S03	mm	280 X 24	±0.3
	H influx_S04		281 X 41	
	H influx_L04 / L06		560 X 24	
	H influx_L09		561 X 41	
Module Height	All		Ref. 5.2	-
Screw Hole	All		4.3	±0.2
Module Weight	S02	g	22.5	±4.0
	S03		22.5	
	S04		38.2	
	L04		44.2	
	L06		44.4	
	L09		75.5	

## c) Structure

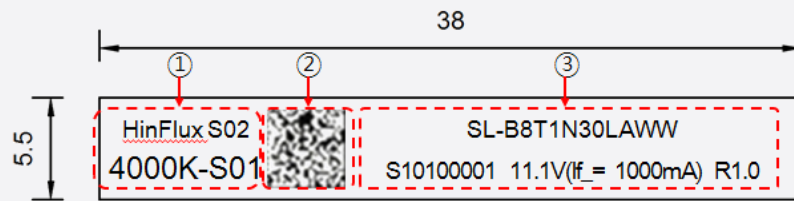
Item	Specification
LED	LM301B
CONNECTOR	1pin-pokein
PCB	MCPCB 1oz

## 4. Certification and Declaration

Item	Compliant to	Remark
Test & Certification	UL / cUL	E344519
	CE	Declaration of Conformity
	Photo-biological Safety	RG1
	Type Classification	Built in module 
Declaration	RoHS	Hazardous Substance & Material
	REACH	Hazardous Substance & Material

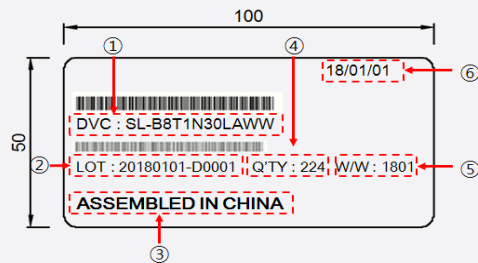
## 5. Label Structure

### a) Module Label



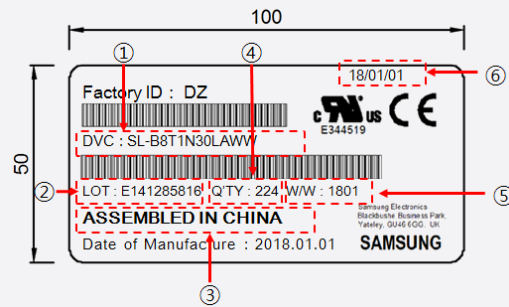
Number	Item	Remark
①	Model Information	-
②	2D Barcode	-
③	Product code Information	-

### b) Tray Label



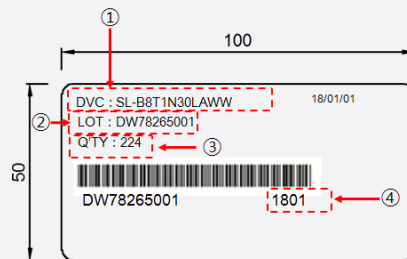
Number	Item	Remark
①	Model Number (Product Code)	SL-B8T1N30LAWW
②	Tray Lot No.	20180101-D0001
③	Country of Origin	ASSEMBLED IN CHINA
④	Packing Quantity	224
⑤	Manufacture Date (year & week)	1801
⑥	Manufacture Date (year/month/date)	18/01/01

## c) Box Label



Number	Item	Remark
①	Model Number (Product Code)	SL-B8T1N30LAWW
②	Lot No.	E141285816
③	Country of Origin	ASSEMBLED IN CHINA
④	Packing Quantity	224
⑤	Product Date (year & week)	1801
⑥	Product Date (year/month/date)	18/01/01

## d) Pallet Label



Number	Item	Remark
①	Product Code	SL-B8T2N80L5US
②	Pallet Lot No.	DW7B26501
③	Packing Quantity	1920
④	Manufacture date (yy/ww)	1801

## 6. Packing Structure

### a) Packing quantity

Product	Packing	Quantity (ea)	Weight (kg)	Remark
H inFlux_S02 H inFlux_S03	Tray	32	8.9	Weight (includes Modules, Trays and a Box)
	Outer Box	256		
	Pallet	6,144		
H inFlux_S04	Tray	32	8.9	Weight (includes Modules, Trays and a Box)
	Outer Box	160		
	Pallet	3,840		
H inFlux_L04 H inFlux_L06	Tray	30	12.3	Weight (includes Modules, Trays and a Box)
	Outer Box	210		
	Pallet	3,360		
H inFlux_L09	Tray	30	12.3	Weight (includes Modules, Trays and a Box)
	Outer Box	120		
	Pallet	1,920		

## 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.

# Legal and additional information.

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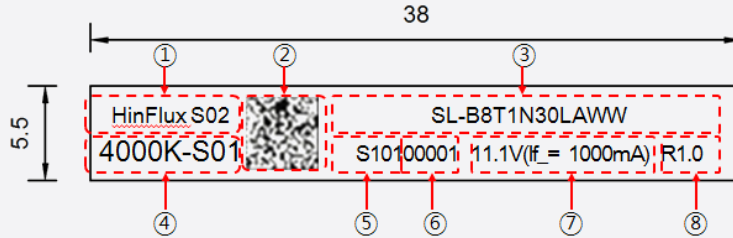
Samsung Electronics Co., Ltd.  
1, Samsung-ro, Giheung-gu,  
Yongin-si, Gyeonggi-do, 17113  
KOREA  
[www.samsung.com/led/](http://www.samsung.com/led/)

# [Appendix]

## 1. Label Information

### a-1) Information of Printed Label

Label Image



No	Item	Remark
1	Model Name	HinFlux S02
2	2D Barcode	-
3	Product code	SL-B8T1N30LAWW
4	CCT - LEDmaker / Bin rank	4000K-S01
5	SMT date	S101 (2018-01-01)
6	Serial No.	00001
7	Typical Voltage (Typical Input current)	11.1 V (If = 1000mA)
8	Product Revision	R1.0

### a-2) 2D Barcode Information

QR code	No	Item	Remark
SL-B8T1N30LAWW_S1011000014000K-S01	1	Product code	SL-B8T1N30LAWW
	2	Space	-
	3	SMT date	S101
	4	SMT line No.	1
	5	Serial No	00001
	6	CCT	4000K
	7	LED Maker	-S
	8	Bin Group No	01

### a-3) Tray Label Barcode Information

Barcode	No	Item	Remark
SL-B8T1N30LAWW	1	Product code (DVC)	SL-B8T1N30LAWW
20180101-D0001	1	Tray Lot No.	20180101-D0001

### a-4) Outbox Label Barcode Information

Barcode	No	Item	Remark
SL-B8T1N30LAWW	1	Product code (DVC)	SL-B8T1N30LAWW
E141285816	1	Outbox Lot No.	E141285816

### a-5) Pallet Label Barcode Information

Barcode	No	Item	Remark
DW7B265001	1	Pallet Lot No.	DW7B265001

## 2. Applicable Wire Information

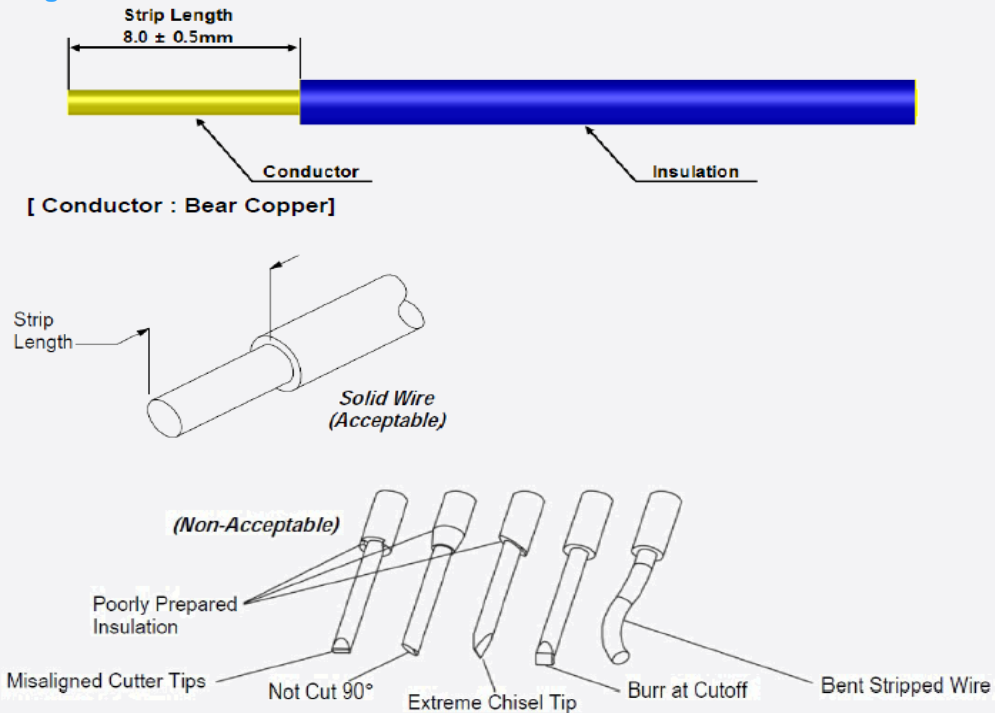
### a) Applicable wire

Wire Range AWG No.	Number of Conductors/ Diameter of a conductors (No./mm)	Insulation Diameter (mm)	Conductor Type
24	1 / 0.51 (0.2mm <sup>2</sup> )	1.35	Solid
22	1 / 0.64 (0.3mm <sup>2</sup> )	1.48	
20	1 / 0.81 (0.5mm <sup>2</sup> )	1.65	
18	1 / 1.02 (0.8mm <sup>2</sup> )	1.86	
22	17 / 0.76 (Reference) After soldering : Φ 0.9mm Max	1.6	Strand
20	21 / 0.95 (Reference) After soldering : Φ 1.1mm Max	1.78	
18	23 / 1.1 (Reference) After soldering : Φ 1.25mm Max	2.21	

Notes

- ※ Outside insulation diameter Φ2.1mm Max
- ※ Regarding strand conductor wire, strictly recommend that Pre bond wire type which is dipping into soldering after twisting

### b) Wire Strip length



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