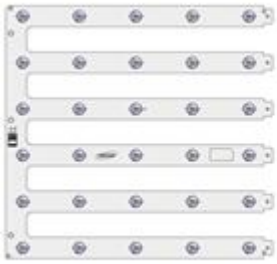
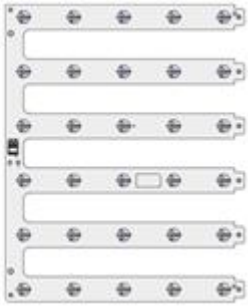
Data Sheet



< LAM-SQ30B >



< LAM-RT30B >

LAM-30LED (Lens Attached Module)			
Model Name	LAM-SQ30B, LAM-RT30B		
Type	15V, 700mA		
Parts No.	CCT	Square Type	Rectangular Type
	3000 K	SI-B8V11125001	SI-B8V11128001
	3500 K	SI-B8U11125001	SI-B8U11128001
	4000 K	SI-B8T11125001	SI-B8T11128001
	5000 K	SI-B8R11125001	SI-B8R11128001
	6500 K	SI-B8P11125001	SI-B8P11128001

SAMSUNG ELECTRONICS CO,.LTD.

SAN #24 NONGSEO-DONG, GIHEUNG-GU,
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Revision History

Rev.No	Data	Page	Revision	Remark
1.0	July, 2013	-	The first preliminary specification is established. Total 13 pages	-
1.5	January 2014	-	Merged two types, square/rectangular Updated specification. Total 12 pages	-
2.0	March 2014	-	Release specification Total 12 pages	-
2.1	March 2014	4	The information of ESD has been added.	-
		4	The Fundamental specification has been added. (Type Classification, Eye Protection, Working Voltage for Insulation)	-
		6, 7	The Appearance drawing has been changed.	-
		7	The dimension of Hole has been changed.	-
		10	Added certification.	
2.5	May 2014	1,5	Higher flux version is added in the product list Total 12 pages	-
3.0	June 2014	3	Min and Max values of higher flux version is added. RT drawing is updated since hole size increase to 4.7mm.	-

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2 Specification 3

3 Structure and Assembly 5

4 Approbation 9

5 Packing 9

6 Precautions In Handling 10

1. Products and Application

This specification defines general specification and performance for Lens Attached LED module. Samsung LAM products 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.

Moreover, LAM solution provides you higher uniformity as integrating optic technology designed by Samsung.

2. Specification

No.	Item	Specifications	Unit	Remark
1	Dimension	SQ : 259(L) x 250(W) x 6.6(h) RT : 216(L) x 273(W) x 6.6(h)	mm	Tolerance:±0.5mm
2	Weight	SQ : 105, RT : 97	g	Tolerance:±10%
3	Rated lifetime	>50,000	hour	L70B50 @Tc = 75℃
4	Ingress Protection	N/A	-	-
5	Operating Temperature	Ta = - 20 ~ 50	℃	-
6	Storage Temperatue	Ta = - 40 ~ 80	℃	-
7	ESD	8	KV	-
8	Type Classification	· Built-in module		
9	Eye Protection	· Risk group 1		
10	Working Voltage for Insulation	· 25 [V]		

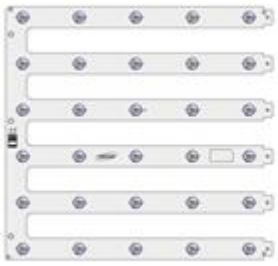
No.	Item	Specifications					Unit	Remark
		Sym.	Model	Min.	Nom.	Max.		
16	Luminous flux	Φ_v	3000K	1238	1370	1504	lm	@700mA, Tp = 35℃
			3500K	1258	1390	1528		
			4000K	1297	**1440**	1576		
			5000K	1336	1480	1624		
			6500K	1297	1440	1576		
17	Efficiency	LPW	3000K	-	128	-	lm/W	@700mA, Tp = 35℃
			3500K	-	130	-		
			4000K	-	**135**	-		
			5000K	-	138	-		
			6500K	-	135	-		
18	Operating Current	Iop	-	-	700	900	mA	-
19	Operating Voltage	Vdc	-	14.0	15.3	17.0	V	@700mA, Tp = 35℃
20	Power Consumption	-	-	-	10.7	-	W	@700mA, Tp = 35℃

No.	Item	Specifications					Unit	Remark
		Sym.	Model	Min.	Nom.	Max.		
21	SDCM	-	~4000K	-	3	-	step	LED to LED, MacAdam @ initial time
			5000K~	-	4	-		
22	Color Rendering Index	CRI	-	80	-	-	Ra	-
23	CCT	-	3000K	2834	2950	3071	K	@700mA, Tp = 35℃
			3500K	3174	3321	3470		
			4000K	3720	3913	4123		
			5000K	4631	4925	5251		
			6500K	5978	6387	6857		

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

3. Structure and Assembly

3-1. Appearance



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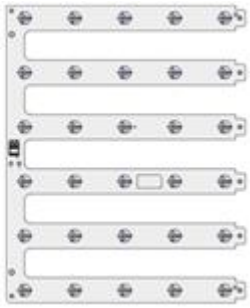
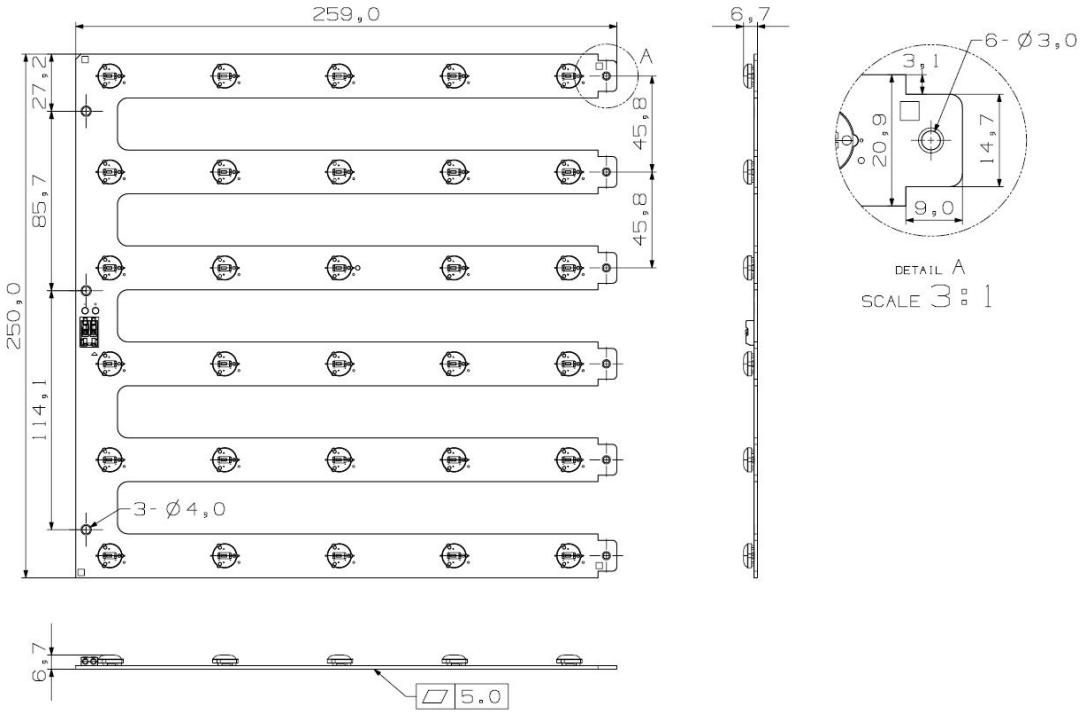


<LAM-RT30B>

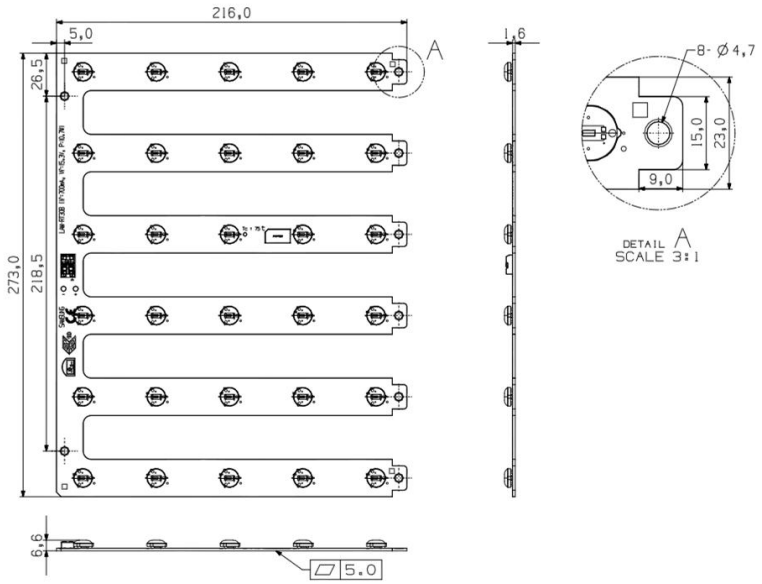
3-2. Dimension

(1) LAM-SQ30B



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	6.6 ± 0.2 mm

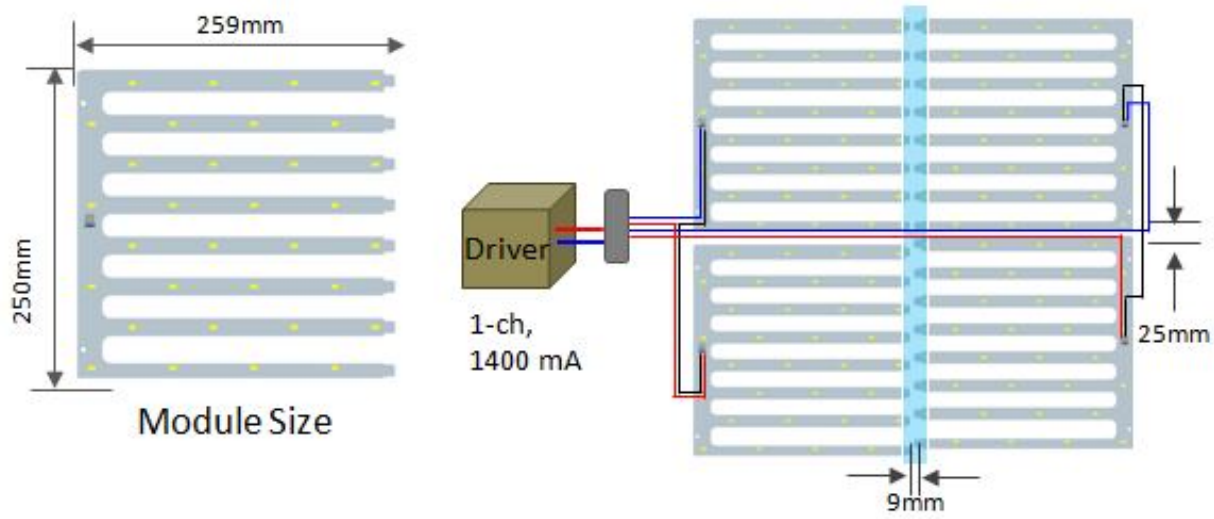
(2) LAM-RT30B



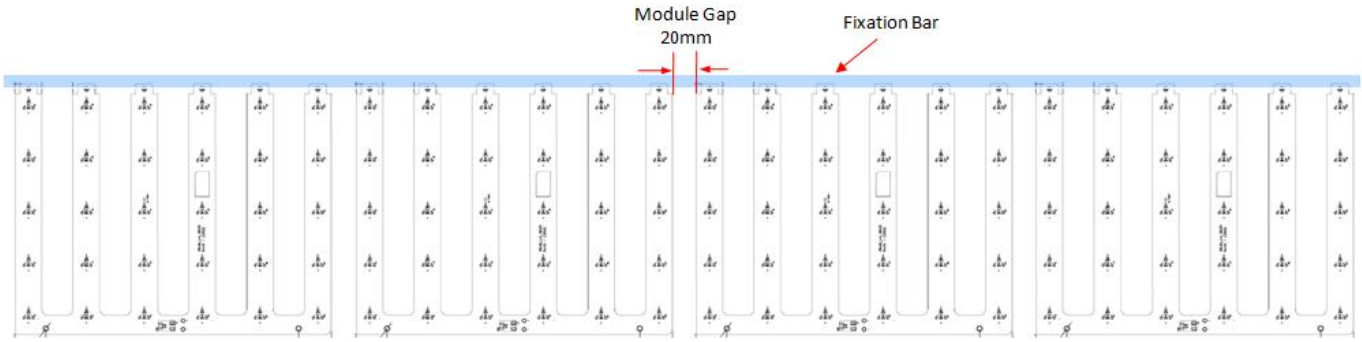
Item		Specifications
L	Length of PCB	216.0 ± 0.5 mm
W	Width of PCB	273.0 ± 0.5 mm
H1	Thickness of PCB	1.6 ± 0.1 mm
H2	Height of PCBA	6.6 ± 0.2 mm

3-3. Assembly

(1) Design case of 2x2 (600mm x 600mm) luminaire, 4 set of LAM-SQ30B

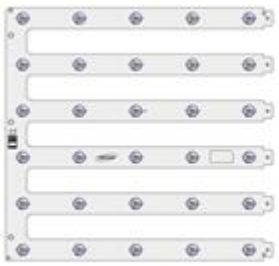


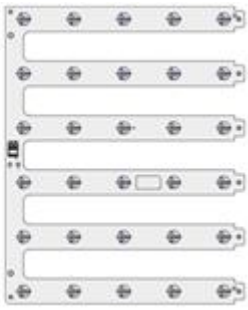
(2) Design case of 1x4 (300mm x 1200mm) luminaire, 4 set of LAM-RT30B



(3) Fixation by Hook

3-4. Structure

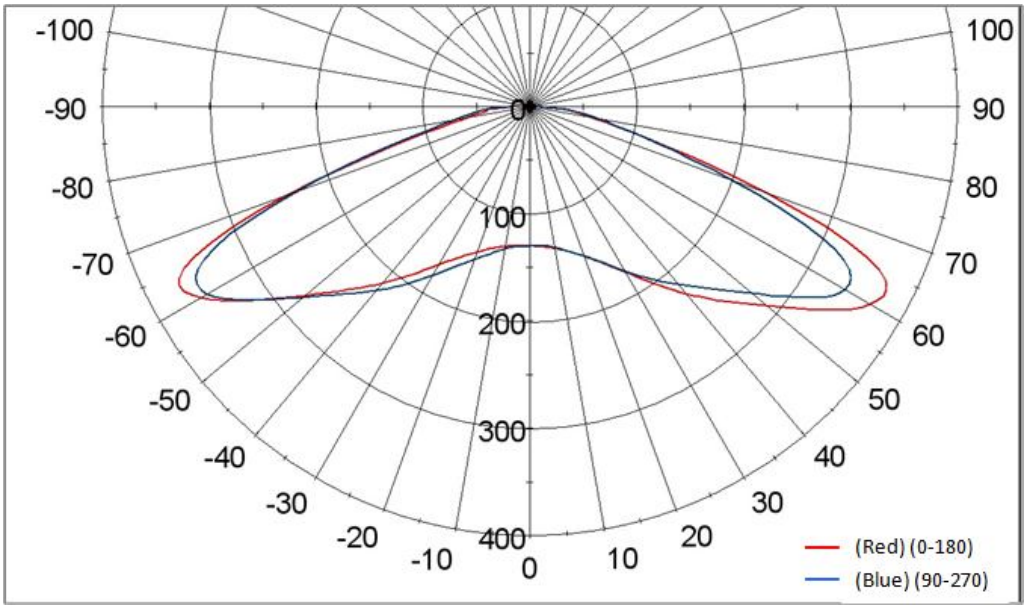




No.		Item	Specifications
Module Assembly	3-1	LED	LM561B : Middle Power LED 30 ea
	3-2	PCB	Material : Copper, Solder mask and Epoxy
	3-3	Lens	PC
	3-4	Connector	AWG 24-18, Strip Length 6-7 mm

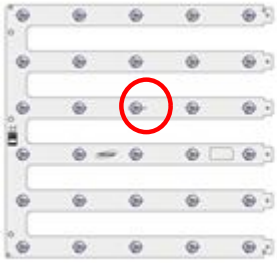
3-5. Light Distribution

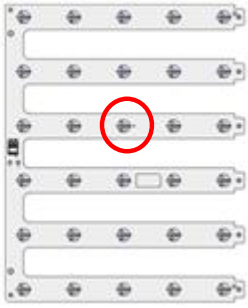
(1) Polar Intensity Diagram : Beam Angle 145 ± 5 [°]



3-6. Thermal Management

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





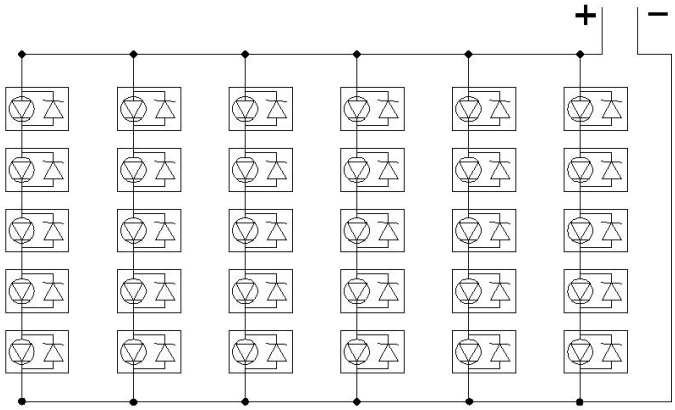
(2) Tc_life : Max temperature to reach 50,000 hours

- Tc_life = 75℃ for >50,000 @ 700mA (L70B50)

(3) Tc_max : Max temperature to operate

- Tc_max = 75℃

3-7. Circuit Schematic



4. Approbation

Item	Compliant to	Result / Remark
General	Eye safety : IEC62471	LM561B LED
Hazardous Substance & Materials	RoHS, Reach	Declared
Certification	CE	EN 62031:2008/A1:2013 EN 62471:2008
	ENEC	EN 62031:2008/A1:2013 EN 62471:2008

5. Packing

5-1 Dimension & Module Q'ty

(1) LAM-SQ30B

Item	1 box	1 pallet
Dimension	365 x 332 x 295 mm	1100 x 800 x 145 mm
Q'ty	60 modules	1800 modules, 30 boxes

(2) LAM-RT30B

Item	1 box	1 pallet
Dimension	375 x 280 x 295 mm	1200 x 800 x 145 mm
Q'ty	60 modules	2400 modules, 40 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(fixtures).
- 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.

Samsung-Electronics may make changes to specifications and product descriptions at any time, without notice.

This is the last page.