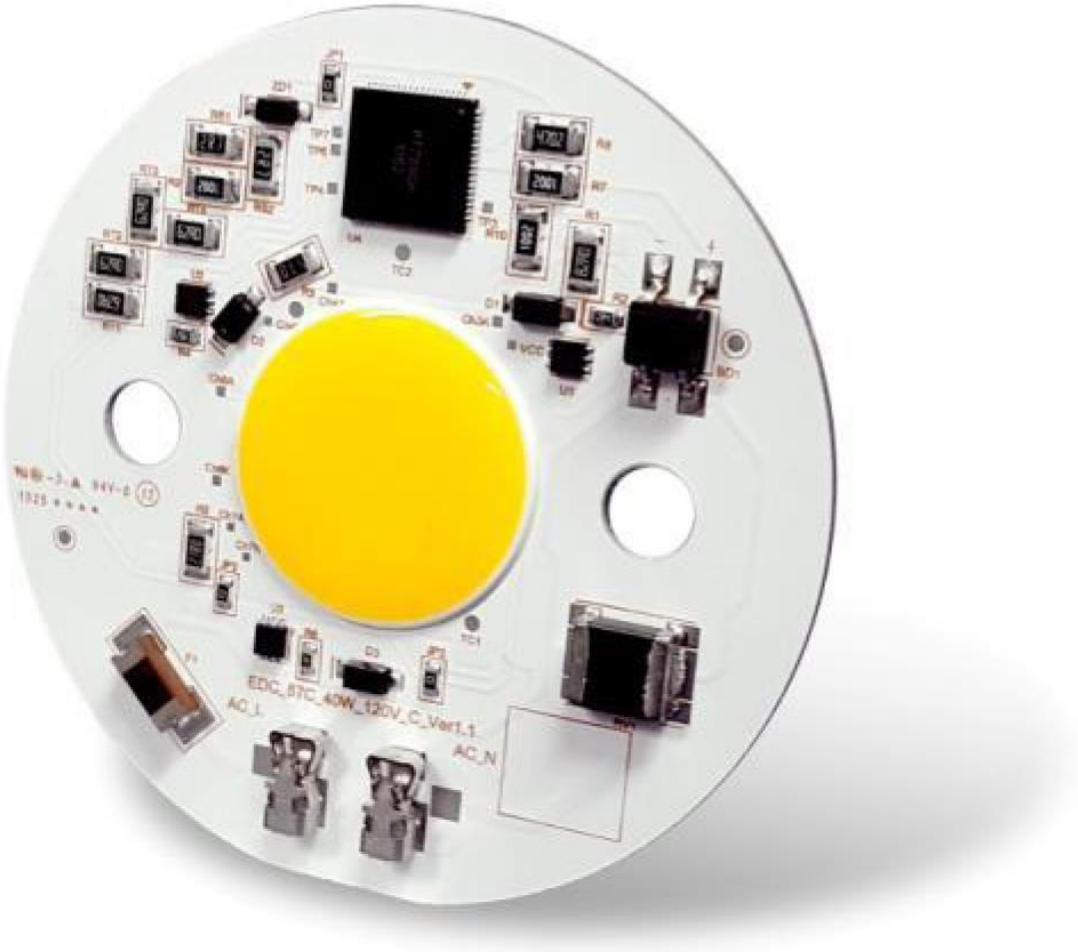
Tesla®
ACOB
TRC57-30W-120

120V Direct Connect - AC LED MODULE
Single CCT
Flicker Free Triac Dimmable
57mm dia. / 30 Watt / 2765lm / 120V

Technical Data Sheet



Tesla ACOB TRC57LCOBP30WXXKCX 120

1. Product Description

*** Description**

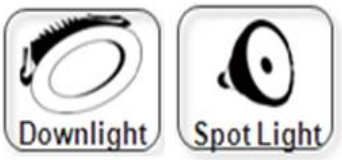
- The Tesla ACOB series module is designed for high power operation to meet high flux output applications.
- It incorporates state of the art SMD LEDs with high reliability semiconductor AC direct drive ICs.
- It is ideal for indoor or down light applications.

*** Features**

- High performance, High brightness
- No emission of harmful short wavelength light (No UV radiation)
- High power conversion efficiency (>0.85)
- High power factor (>0.99)
- Low THD (< 20%)
- Low EMI
- Thermal shutdown function embedded (150℃)
- RoHS compliant

*** Applications**

- Down-Light (Indoor Lighting)
- Spot Light



2. Absolute Maximum Ratings

Parameters	Symbol	Min Value	Max Value	Unit
Maximum power dissipation	Pd	-	33.0	W
Maximum operation voltage	Vop	-	130	V
Operation temperature	Top	-30	+85	℃
Storage temperature	Tst	-40	+100	℃

➢ Operation temperature is not related to the lifetime.

3. Product Identification

Part Number -- Key																																		
Product Code	Shape	Drive Method	Dimension/Diameter (mm)							Internal Codes					Dimming Type		Module Power			aTHD	CCT (XXK) Warm on Dim (XYWD)				Connection Type	CRI	Miscellaneous	-	Input Voltage						-	Revision Level	
T	R	C	5	7						L	C	O	B		P		3	0	W	L	X	X	K		C	X		-	1	2	0				-	R	1

Model Number -- Key																														
Product Code	Shape	Drive Method	Dimension/Diameter (mm)							-	Dimming Type	Module Power				-	CCT (XXK) Warm on Dim (XYWD)			-	Input Voltage							-	Revision Level	
T	R	C	5	7						-	P		3	0	W	-	X	X	K		-	1	2	0					-	R 1	

Product Code		
S	=	SnapBrite™
T	=	Tesla™
G	=	GeoLite™
B	=	BriteDriver®

Shape		
R	=	Round
S	=	Square
T	=	Star
L	=	Linear

Dimension/Diameter				
L	=	x	X	X
W	=	y	Y	Y
D	=	Z	Z	Z

Module Power		
Q	=	0.25W
H	=	0.5W
T	=	0.75W
R	=	Decimal Point

aTHD		
L	=	< 20%
H	=	≥ 20%

CCT/WOD					
2	2	K		=	2200K
2	7	K		=	2700K
3	0	K		=	3000K
3	5	K		=	3500K
4	0	K		=	4000K
5	0	K		=	5000K
5	7	K		=	5700K
3	2	W	D	=	~ 2500K To 2200K Warm on Dim
4	2	W	D	=	~ 2700K To 2200K Warm on Dim
5	2	W	D	=	~ 3000K To 2200K Warm on Dim

Connection Type		
C	=	Poke-In Connector
I	=	Insullation Displacement Conn.
O	=	Connector + Solder Pads
W	=	Wire "Pigtail"
X	=	Solder Pads

CRI		
L	=	< 80 CRI
S	=	≥ 80 CRI
H	=	≥ 90 CRI

Input Voltage		
12V	=	12 VAC, Magnetic or Electronic Transformer Sourse
12E	=	12 VAC, Electronic Transformer Sourse Only
120V	=	120 VAC
120R	=	Rectified 120 VAC
230V	=	230 VAC
120/277	=	120 VAC TO 277 VAC

LED Drive Method		
C	=	Chip Drive
L	=	T24 Driver on Board
E	=	Electronic Transformer
V	=	LV Magnetic

4. Electro-optical Characteristics (Tc=25℃ & 55℃.)

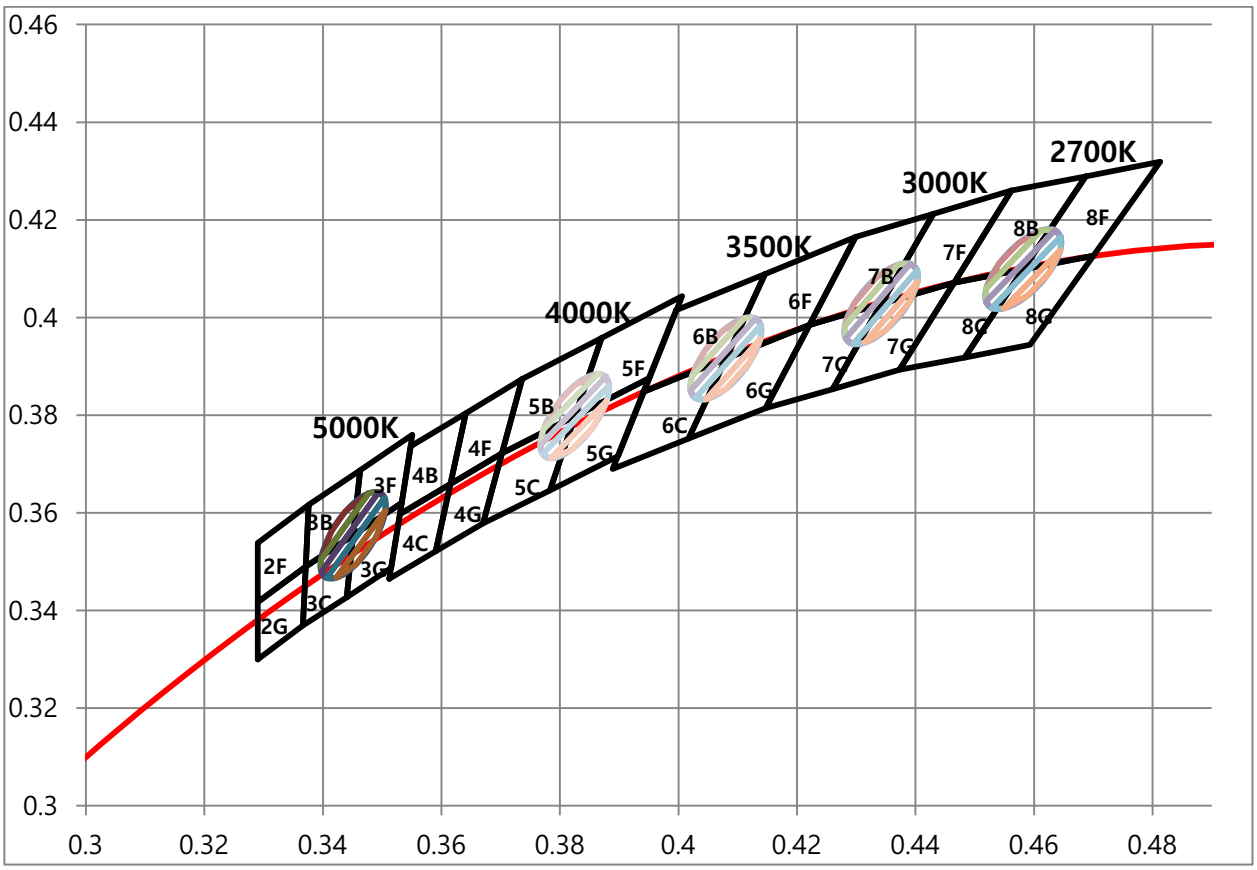
Parameters	Symbol	Tc = 25℃			Tc = 55℃			Unit	Condition
		Min.	Typ.	Max.	Min.	Typ.	Max.		
Luminous Flux	Φv	2550	2850	-	2400	2700	-	lm	Vop=120V,2700K,CRI80
		2700	2700	2700	2700	2700	-		Vop=120V,3000K,CRI80
		2760	3060	-	2610	2910	-		Vop=120V,3500K,CRI80
		2850	3150	-	2700	3000	-		Vop=120V,4000K,CRI80
		3000	3300	-	2850	3150	-		Vop=120V,5000K,CRI80
		2100	2400	-	1950	2250	-		Vop=120V,2700K,CRI90
		2250	2550	-	2100	2400	-		Vop=120V,3000K,CRI90
		2280	2580	-	2130	2430	-		Vop=120V,3500K,CRI90
		2340	2640	-	2190	2490	-		Vop=120V,4000K,CRI90
		2400	2700	-	2250	2550	-		Vop=120V,5000K,CRI90
Efficiency	lm/W	85	95	-	80	90	-	lm/W	Vop=120V,2700K,CRI80
		90	100	-	85	95	-		Vop=120V,3000K,CRI80
		92	102	-	87	97	-		Vop=120V,3500K,CRI80
		95	105	-	90	100	-		Vop=120V,4000K,CRI80
		100	110	-	95	105	-		Vop=120V,5000K,CRI80
		70	80	-	65	75	-		Vop=120V,2700K,CRI90
		75	85	-	70	80	-		Vop=120V,3000K,CRI90
		76	86	-	71	81	-		Vop=120V,3500K,CRI90
		78	88	-	73	83	-		Vop=120V,4000K,CRI90
		80	90	-	75	85	-		Vop=120V,5000K,CRI90

(1) At 220Vac, T_c = 25 ºC & 55ºC
(2) Φv is the total luminous flux output measured with an integrated sphere.
- Measurement accuracy : **CRI(**±3), **Φv** (±3%), **Vf** (±3.0V), **Percent Flicker** (±3%)

(3) Correlated Color Temperature is derived from the CIE 1931 Chromaticity diagram.

Correlated Color Temperature	CCT	MacAdam 3Step			K	
Color Rendering Index	CRI	80/90	-	-	-	Vop=120V
Viewing Angle FWHM	2θ1/2	110	120	130	deg	Vop=120V
Operation Voltage	Vop	100	120	140	V	
Power Dissipation	Pd	27	30	33	W	Vop=120V
Operation Frequency	Fop	50 / 60			Hz	Vop=120V
Power Factor	PF	Over 0.99			V	Vop=120V
Current THD	ATHD	Less than 20			%	Vop=120V

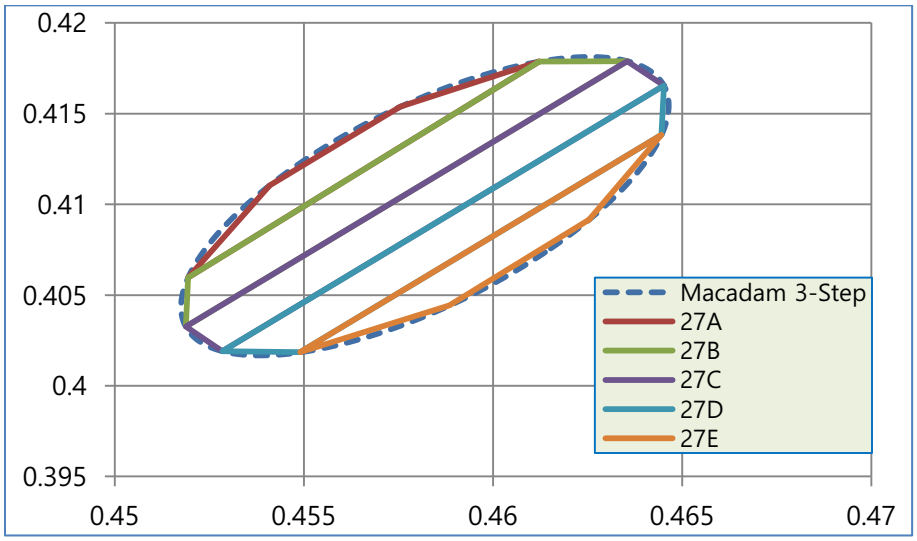
5. CIE Chromaticity Diagram



(1) Lumens maintains a tolerance of ±0.005 on chromaticity (CCx, CCy)

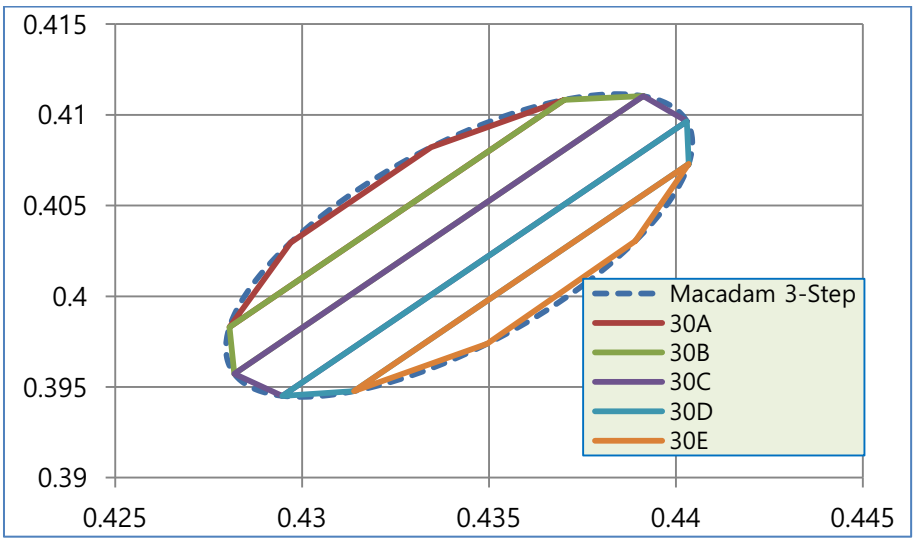
8. Chromaticity Coordinates

8-1. 2700K



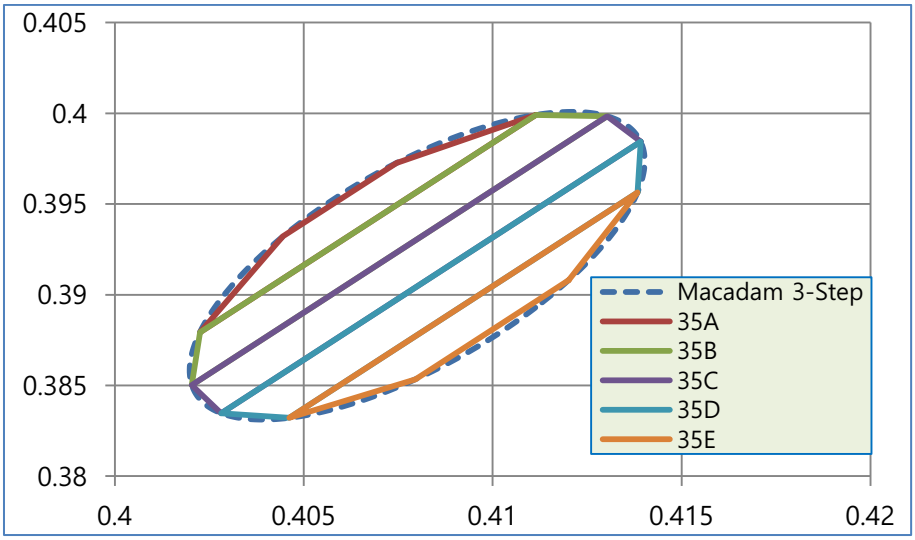
27A		27B		27C		27D		27E	
X	Y	X	Y	X	Y	X	Y	X	Y
0.4612	0.4179	0.4636	0.4179	0.4645	0.4165	0.4645	0.4138	0.4625	0.4092
0.4576	0.4154	0.4612	0.4179	0.4636	0.4179	0.4645	0.4165	0.4645	0.4138
0.4541	0.4110	0.4519	0.4060	0.4519	0.4033	0.4528	0.4019	0.4549	0.4018
0.4519	0.4060	0.4519	0.4033	0.4528	0.4019	0.4549	0.4018	0.4588	0.4044
0.4612	0.4179	0.4636	0.4179	0.4645	0.4165	0.4645	0.4138	0.4625	0.4092

8-2. 3000K



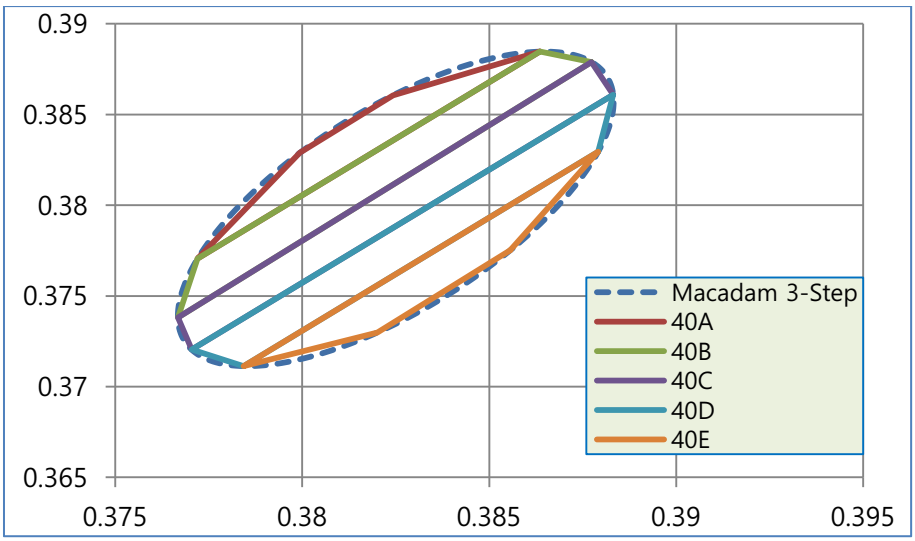
30A		30B		30C		30D		30E	
X	Y	X	Y	X	Y	X	Y	X	Y
0.4370	0.4108	0.4391	0.4110	0.4403	0.4097	0.4403	0.4073	0.4389	0.4031
0.4334	0.4082	0.4370	0.4108	0.4391	0.4110	0.4403	0.4097	0.4403	0.4073
0.4297	0.4030	0.4281	0.3983	0.4282	0.3957	0.4295	0.3945	0.4314	0.3948
0.4281	0.3983	0.4282	0.3957	0.4295	0.3945	0.4314	0.3948	0.4350	0.3974
0.4370	0.4108	0.4391	0.4110	0.4403	0.4097	0.4403	0.4073	0.4389	0.4031

8-3. 3500K



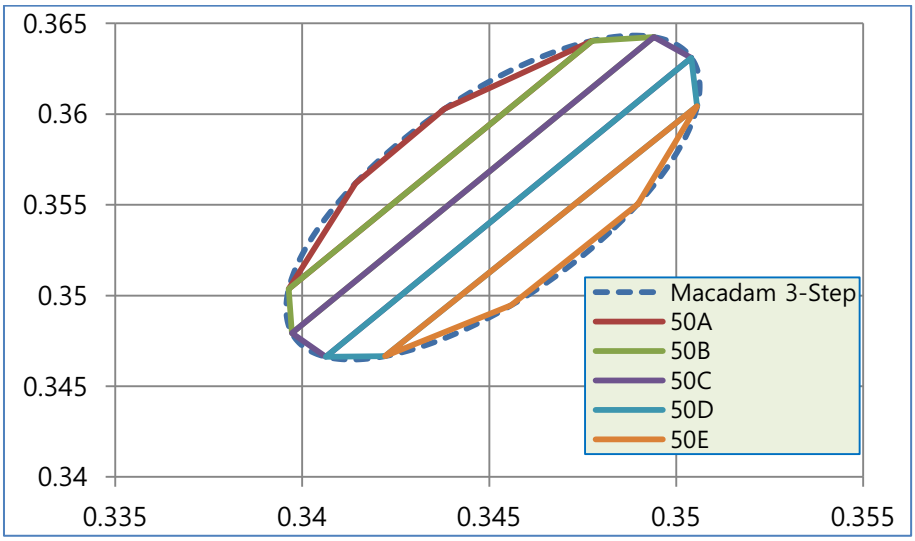
35A		35B		35C		35D		35E	
X	Y	X	Y	X	Y	X	Y	X	Y
0.4111	0.3999	0.4130	0.3998	0.4139	0.3984	0.4138	0.3956	0.4120	0.3908
0.4075	0.3973	0.4111	0.3999	0.4130	0.3998	0.4139	0.3984	0.4138	0.3956
0.4044	0.3932	0.4023	0.3879	0.4020	0.3850	0.4028	0.3835	0.4046	0.3832
0.4023	0.3879	0.4020	0.3850	0.4028	0.3835	0.4046	0.3832	0.4080	0.3853
0.4111	0.3999	0.4130	0.3998	0.4139	0.3984	0.4138	0.3956	0.4120	0.3908

8-4. 4000K



40A		40B		40C		40D		40E	
X	Y	X	Y	X	Y	X	Y	X	Y
0.3864	0.3885	0.3877	0.3879	0.3883	0.3861	0.3879	0.3829	0.3856	0.3775
0.3824	0.3861	0.3864	0.3885	0.3877	0.3879	0.3883	0.3861	0.3879	0.3829
0.3799	0.3829	0.3772	0.3771	0.3767	0.3738	0.3770	0.3720	0.3784	0.3711
0.3772	0.3771	0.3767	0.3738	0.3770	0.3720	0.3784	0.3711	0.3820	0.3730
0.3864	0.3885	0.3877	0.3879	0.3883	0.3861	0.3879	0.3829	0.3856	0.3775

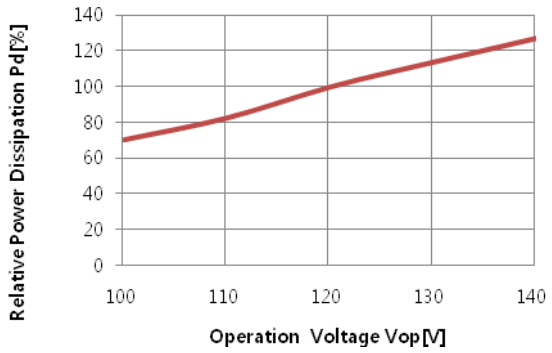
8-5. 5000K

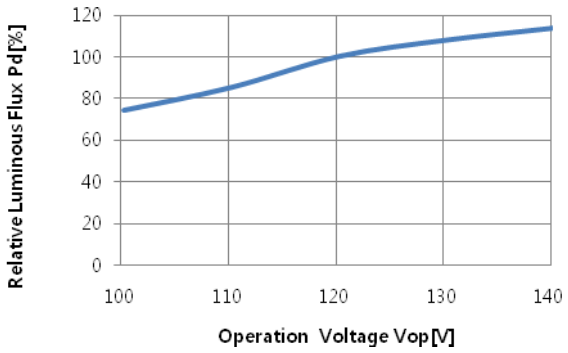


50A		50B		50C		50D		50E	
X	Y	X	Y	X	Y	X	Y	X	Y
0.3478	0.3640	0.3494	0.3642	0.3504	0.3631	0.3506	0.3604	0.3490	0.3550
0.3438	0.3603	0.3478	0.3640	0.3494	0.3642	0.3504	0.3631	0.3506	0.3604
0.3414	0.3562	0.3396	0.3504	0.3397	0.3479	0.3406	0.3466	0.3422	0.3467
0.3396	0.3504	0.3397	0.3479	0.3406	0.3466	0.3422	0.3467	0.3456	0.3495
0.3478	0.3640	0.3494	0.3642	0.3504	0.3631	0.3506	0.3604	0.3490	0.3550

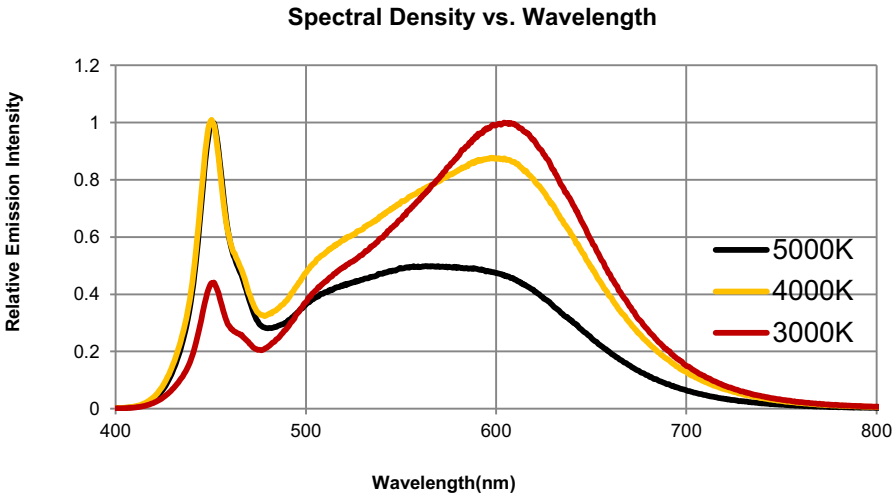
7

7-1 Voltage Characteristics(Ta=25℃)

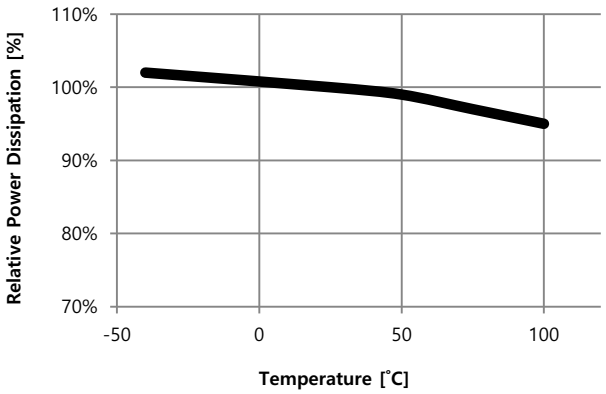


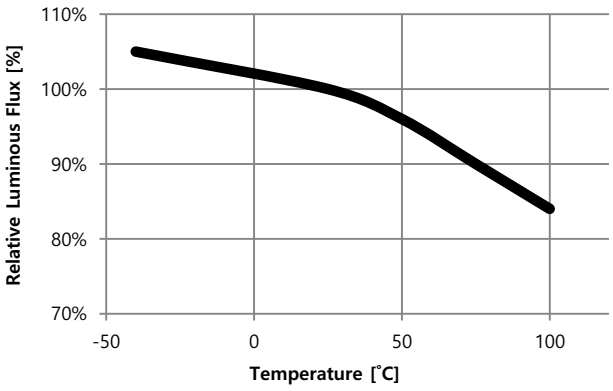


7-2 Spectrum Characteristics(Ta=25℃)

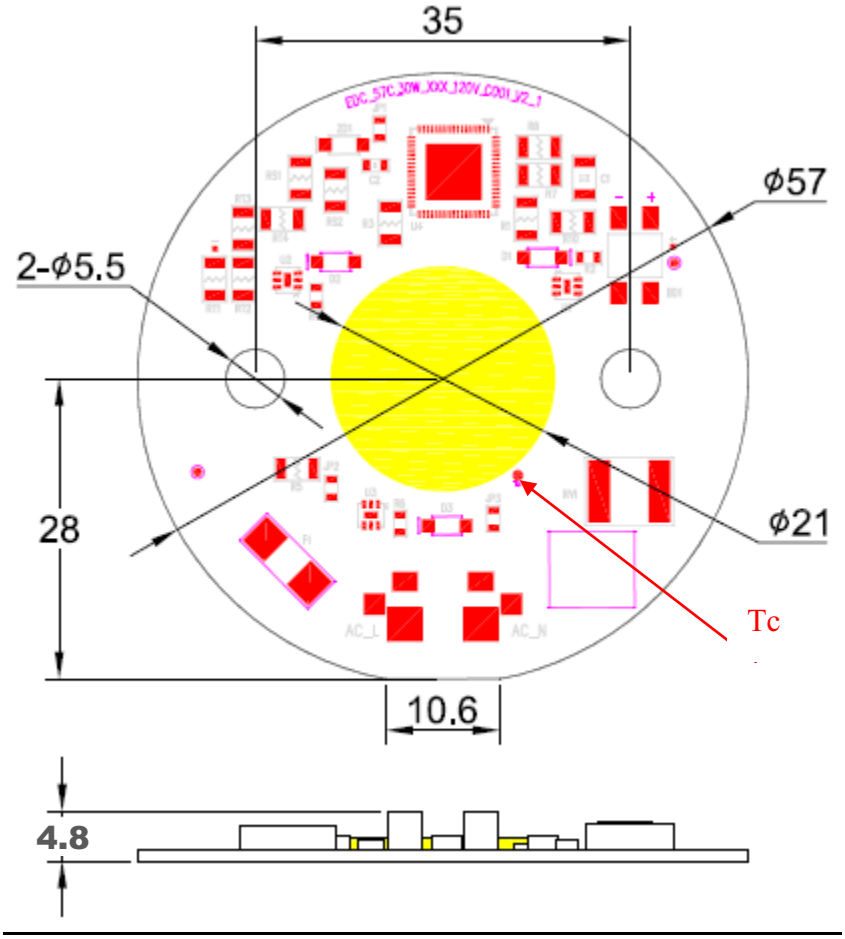


7-3 Temperature Characteristics





8 Outline Dimensions



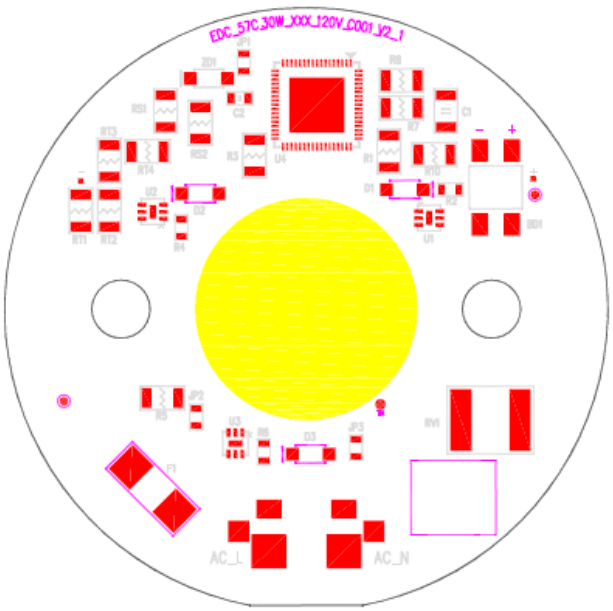
* LES = Light Emitted Surface

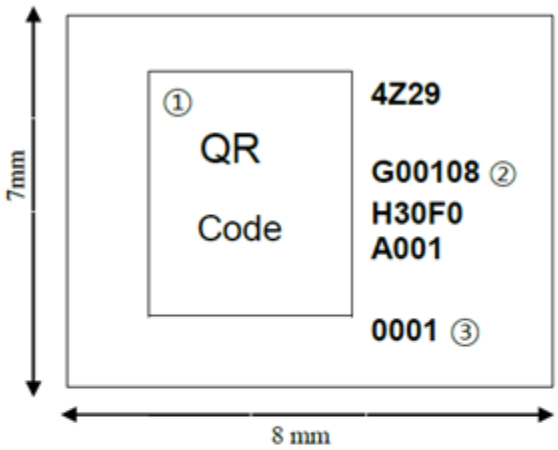
Unit : mm

1) Outline Diameter : 57Φ Height(max) : 11mm
2) Tolerance - All measurements are ± 0.1 mm unless otherwise indicated.

9. EDC Module Marking

A. Information Identification by report on the PCB (Silk)
- Module Identification Code





①	QR Code
②	Traceability Code
③	Serial No.

A-1 Traceability Code Table

No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Marking	4	8	1	5	T	9	9	9	1	8	H	3	0	C	0	A	0	0	1	0	0	0	1
Meaning	SMT Year/Month/Day				SMT Site	Group No.			Watt		CRI	CCT		Volt	Default	LOT Serial No.				SMT Serial No.			
Ciphers	4				1	3			2		1	2		1		4				4			
How to Use	1st: Last No. of Year 2nd: Month (1~9,X,Y,Z) 3rd~4th: Day				T: PST	999			18		H	30		C		A001				0001			

A-2 Traceability Code Marking Table

SMT Year/Month

code	Year
4	2014
5	2015
6	2016

Month	1	2	3	4	5	6	7	8	9
Code	1	2	3	4	5	6	7	8	9
Month	10	11	12						
Code	X	Y	Z						

SMT Day

Day	1	2	3	4	5	6	7	8	9	10	11
Code	01	02	03	04	05	06	07	08	09	10	11
Day	12	13	14	15	16	17	18	19	20	21	22
Code	12	13	14	15	16	17	18	19	20	21	22
Day	23	24	25	26	27	28	29	30	31		
Code	23	24	25	26	27	28	29	30	31		

SMT Site

SMT Site	D	L	B	K	Y	W	H	G	T
Code	1st Vendor	2nd Vendor	3rd Vendor	4th Vendor	5th Vendor	6th Vendor	7th Vendor	8th Vendor	9th Vendor

Watt

Watt	1	2	3	4	5	6	7	8	9	10	…	99
Code	01	02	03	04	05	06	07	08	09	10	…	99
Watt	100	101	…	110	111	…	330	331	…	338	339	etc.
Code	A0	A1	…	B0	B1	…	Z0	Z1	…	Z8	Z9	ZZ

*** AO:100, B0:110, C0:120, D0:130, E0:140, F0:150, G0:160, H0:170, J0:180, K0:190, L0:200, M0:210 N0:220, P0:230, Q0:240, R0:250, S0:260, T0:270, U0:280, V0:290, W0:300, X0:310, Y0:320, Z0:330**

CRI

CRI	Under 70	Min 70	Min 75	Min 80	Min 85	Min 90
Code	L	N	M	H	V	U

CCT

CCT	2700K	3000K	3500K	4000K	4500K	5000K	5700K	6500K
Code	27	30	35	40	45	50	57	65

Volt

Volt	100V	110V	120V	200V	220V	230V	240V	250V	277V	347V	DC	etc.
Code	A	B	C	D	E	F	G	H	J	K	X	Z

10. Package And Marking Of Product

A. Tray Information

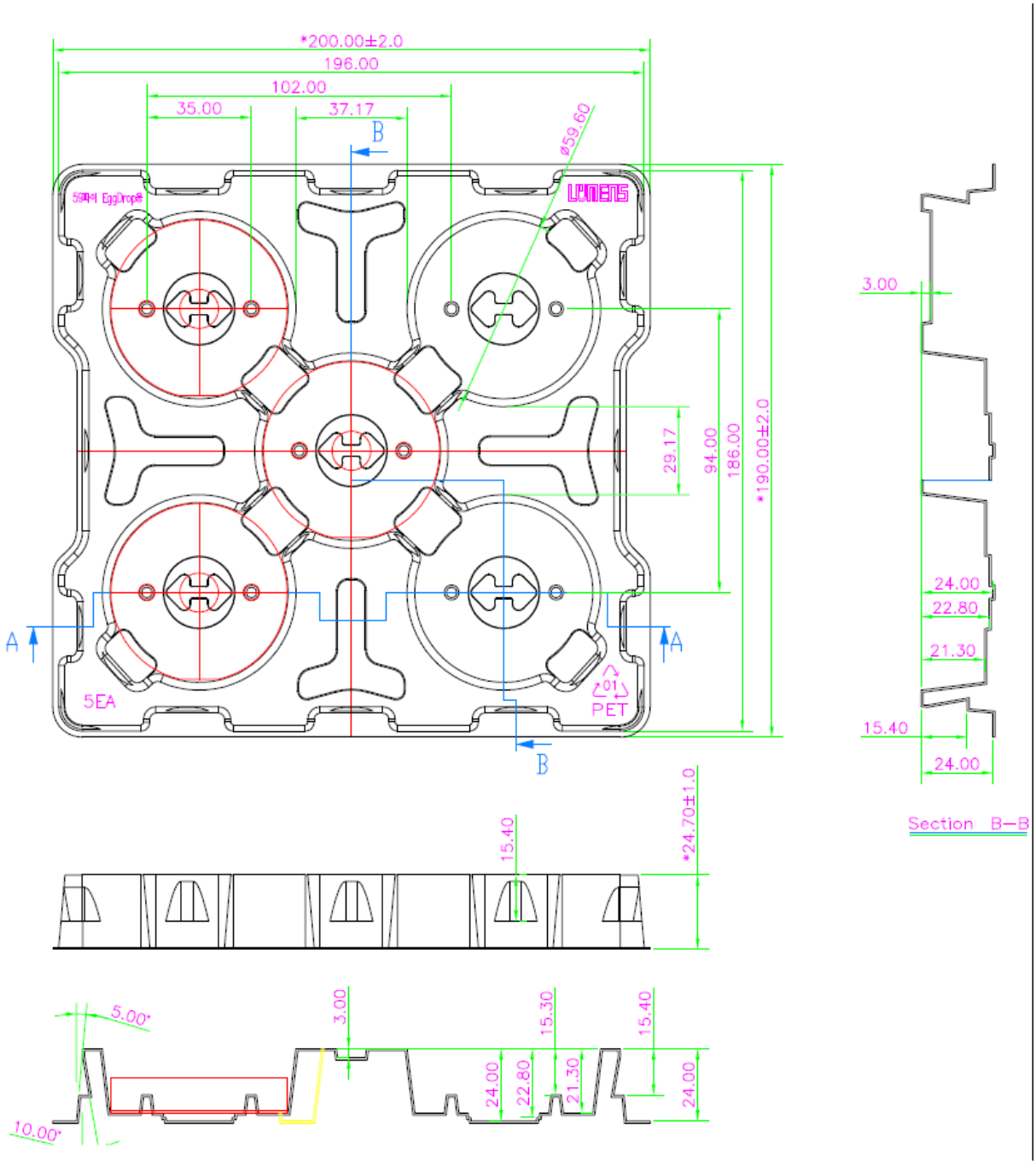
Size: 200mm x 190mm × 24.7mm

Color: Clear

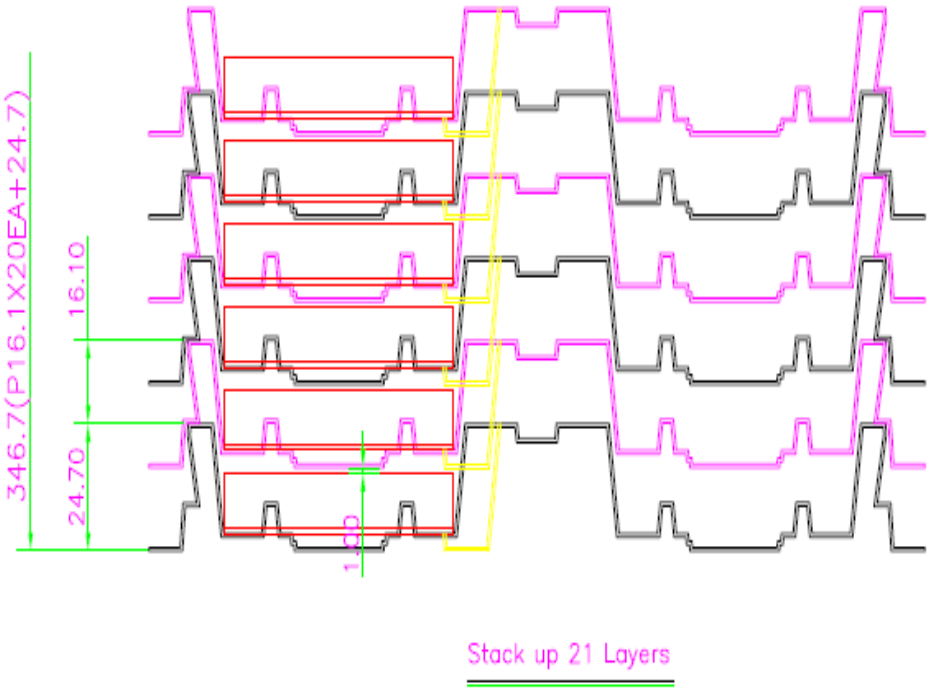
Surface Resistivity: 10^6 ~ 10^9 Ω/Sq.

B. Package

5 pcs are packed in one tray.



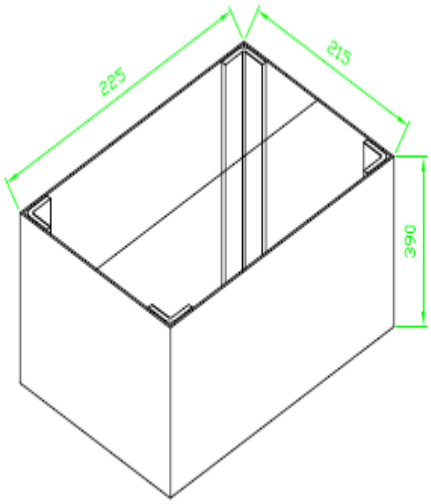
- Side view –



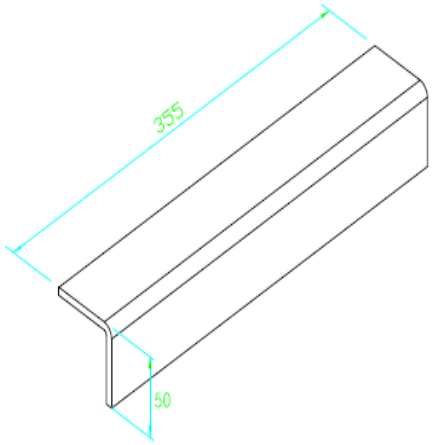
– Packing Tray –

C. Box Packing Specifications

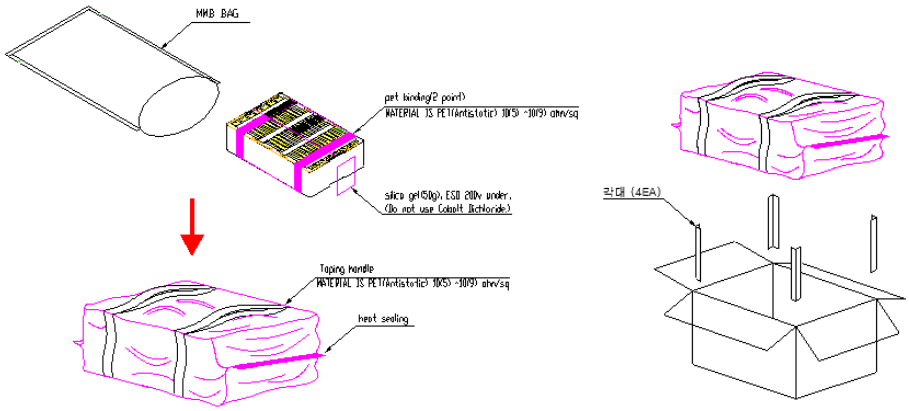
Tray products (numbers of products are 5 pcs) packed.
There is no product on the top tray
21 Tray (total maximum number of products are 100pcs) packed in a box.



225 X 215 X 390 mm

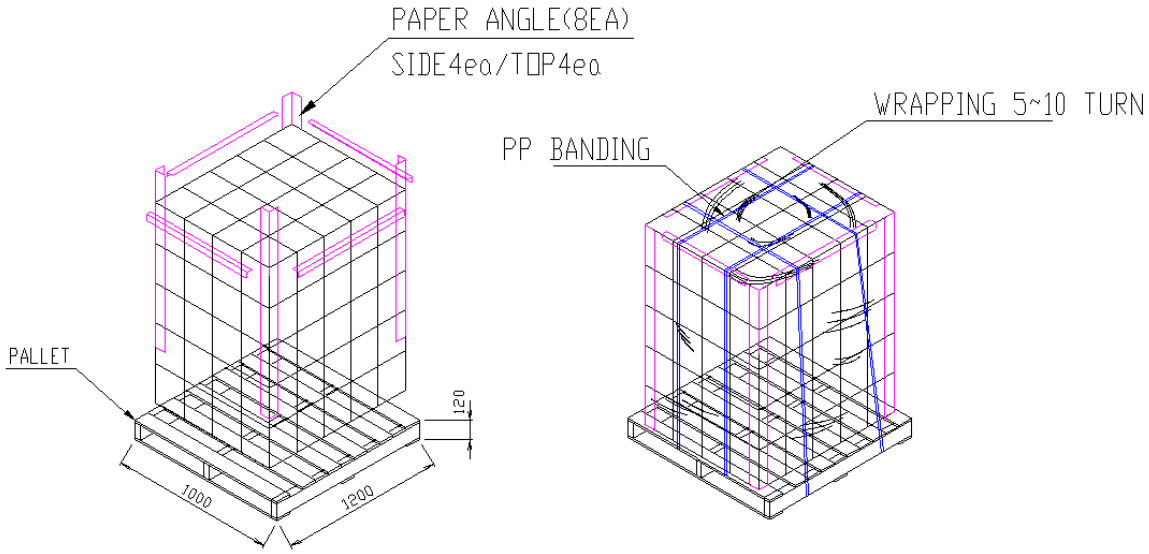


50 X 50 X 355 mm



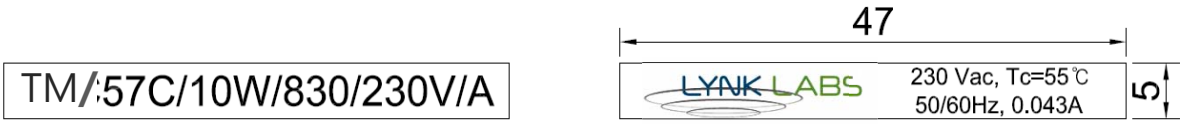
D. Pallet Loading

Box is stacked by 4 layers on the Pallet.
Each layer has 20 boxes



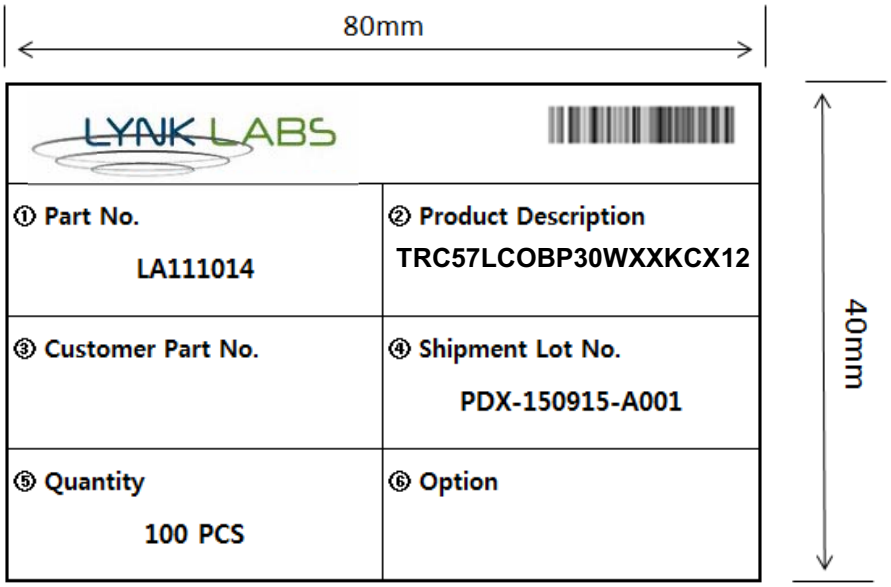
Size : 1,000mm(W) X 1,200mm(L) X 1,560mm(H)

E. Holder Label



E BOX Label

Specifying Customer, Model, Customer Part No, Lot No, Quantity
On both trays and boxes, the same label is attached.



1. PART No
2. Model Name.
3. Customer Part NO
4. Shipment Lot No.
5. Quantity.

F. Shipment Lot No. Indication

No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Marking	C	G	X	-	1	0	0	2	0	2	-	A	0	0	1
Meaning	COB	SMT Site	Default	Default	Packing Year/Month/Day						Default	Default	Packing serial No.		
Ciphers	1	1			6								3		
How to Use	C : COB	G : K2			1st~2nd : Last two digits of Year 3rd~4th : Month(01~12) 5th~6th : Day(01~31)								001		

13. Cautions

- The LED Module itself and all its components may not be mechanically stressed.
- Make sure proper discharge prior to starting work.
- DO NOT touch any of the circuit board, components or terminals with body or metal while circuit is active.
- Installation of LED Module needs to be made with regard to all applicable electrical and safety standards. Only qualified personnel should be allowed to perform installation.
- DO NOT add or change wires while circuit is active.
- DO NOT make any modification on module.
- DO NOT use adhesives to attach the LED that outgas organic vapor.
- DO NOT use together with the materials containing Sulfur.
- The LED Module needs to be mounted on a heat sink providing adequate thermal dissipation.
- DO NOT exceed the values given in this specification
- Be careful when soldering to board so as not to create a short between different trace patterns.
- Take Care not to apply voltage above the maximum rating, otherwise damage may occur.
- Be careful not to exceed the maximum operation temperature of 65℃ at the Tc1 Point when the modules are used in an enclosed environment.

  (Tc1 + 30℃ ≒ Maximum LES temperature(T_j)) : Depends on specification of heat sink
- DO NOT assemble in conditions of high moisture and/or oxidizing gas such as CI, H2S, NH3, SO2, NOx, etc.
- The module should not be installed in end equipment without ESD (Electrical Static Discharge) protection.
- Damage by corrosion will not be allowed as a defect claim. Lynk ACOB Modules are recommended for Indoor use only.
- Great care should be taken not to look directly at the Module when illuminated. Intense light could cause damage to eyes. Use proper goggles to protect your eyes during operation.
- Extended exposure to sunlight or UV can cause the lens to discolor.
- Moisture-Proof package
  1. When moisture is absorbed into the LED light engine it may vaporize and expand products during manufacturing. There is a possibility that this may cause exfoliation of the contacts and damage to the optical characteristics of the LEDs. For this reason, a moisture-proof pack is used to keep moisture to a minimum in the package.
  2. A pack of a moisture-absorbent material (silica gel) is inserted into the protective bag. The silica gel changes its color from blue to pink as it absorbs moisture.
- Storage Conditions
  1. Before opening the package: The LED light engines should be kept at 30℃ or less and 90% RH or less. The LED light engines should be used within a year. When storing the LED light engines, moisture-proof packaging with moisture-absorbent material (silica gel) is recommended.
  2. After opening the package: The LED light engines should be kept at 30℃ or less and 70% RH or less. The LEDs should be soldered within 168 hours (7 days) of opening the package. If unused LED light engines remain, they should be stored in moisture-proof packages, such as sealed containers with packages of moisture -absorbent material (silica gel). It is also recommended to return the LED light engines to the original moisture-proof bag and to reseal the moisture-proof bag again.
  3. Please avoid rapid transitions in ambient temperature, especially in high humidity environments where condensation can occur.

NOTE :

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