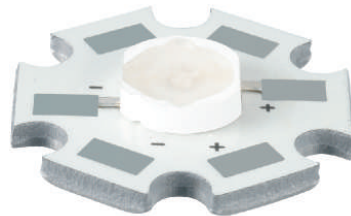


# 5W HI-POWER LED SPECIFICATION

HPR8C-4xK5xGx

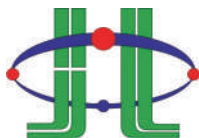


Drawn by	Checked by	Approved by



DATE:2010/5/6

REV:C



**HUEY JANN ELECTRONICS INDUSTRY CO., LTD.**

No.27 Line 466 Sec.2,Cannng-nan Rd. Wu-chi Town Taichung Shien, Taiwan, R.O.C.

TEL:+886-4-26393976 FAX:+886-4-26393125

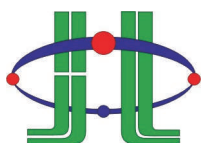
HUEY JANN High Power 5W LED is made of GaInN chips with precise package technique which makes excellent heat dissipation to reach the advantages of high luminous efficiency, low decay, and long endurance. Now we have these colors available: red, green, blue, white, yellow and infrared.

☰ **FEATERUS**

- Instant light
- Long operating life
- Superior ESD defense
- Low voltage DC operated
- More energy efficient than incandescent and most halogen lamps

☰ **TYPICAL APPLICATIONS**

- Architectural detail lighting
- Portable flashlight
- Medical applications
- Beacon lights
- Decoration lights
- Spotlight



**HUEY JANN ELECTRONICS INDUSTRY CO., LTD.**

No.27 Line 466 Sec.2,Cannng-nan Rd. Wu-chi Town Taichung Shien, Taiwan, R.O.C.

TEL:+886-4-26393976 FAX:+886-4-26393125

Explanation of Part Number:

H P R 8 C - 4 xK 5 xG / WPCB  
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

1.H: Huey Jann

2.P: High power LED Type

3.Shape distinguish:

B: Lambertian type      S: Side emitting type  
D: Focusing type      E: Focusing type  
R: Reflector type

4.Identification no:

5.Lead frame type

6.Appearance:

1:White Diffusion  
4:Water Clear

7.Color number:

8K: Blue      9K: White

8.Power type:

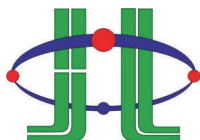
5: 5W

9.Color kind:

BG: Blue  
WG: Pure White      YWG: Warm White  
WGA: Pure White      YWGA: Warm White  
YWG(4000°K): Nature White  
YWGA(4000°K): Nature White

10.Heat conduction type:

Non: emitter type  
/WPCB: with white star type heat sink



**HUEY JANN ELECTRONICS INDUSTRY CO., LTD.**

No.27 Line 466 Sec.2,Cannng-nan Rd. Wu-chi Town Taichung Shien, Taiwan, R.O.C.

TEL:+886-4-26393976      FAX:+886-4-26393125

DEVICES

Emitter Type

Item	Lens Color	Dice Source	Color
HPR8C-48K5BG	Water Clear	GaN/GaN	Blue
HPR8C-49K5WG			Pure White
HPR8C-49K5WGA			Nature White
HPR8C-49K5YWG(4000°K)			
HPR8C-49K5YWGA(4000°K)			Warm white
HPR8C-49K5YWG			
HPR8C-49K5YWGA			

With White Star MCPCB Type

Item	Lens Color	Dice Source	Color
HPR8C-48K5BG/WPCB	Water Clear	GaN/GaN	Blue
HPR8C-49K5WG/WPCB			Pure White
HPR8C-49K5WGA/WPCB			Nature White
HPR8C-49K5YWG/WPCB(4000°K)			
HPR8C-49K5YWGA/WPCB(4000°K)			Warm white
HPR8C-49K5YWG/WPCB			
HPR8C-49K5YWGA/WPCB			

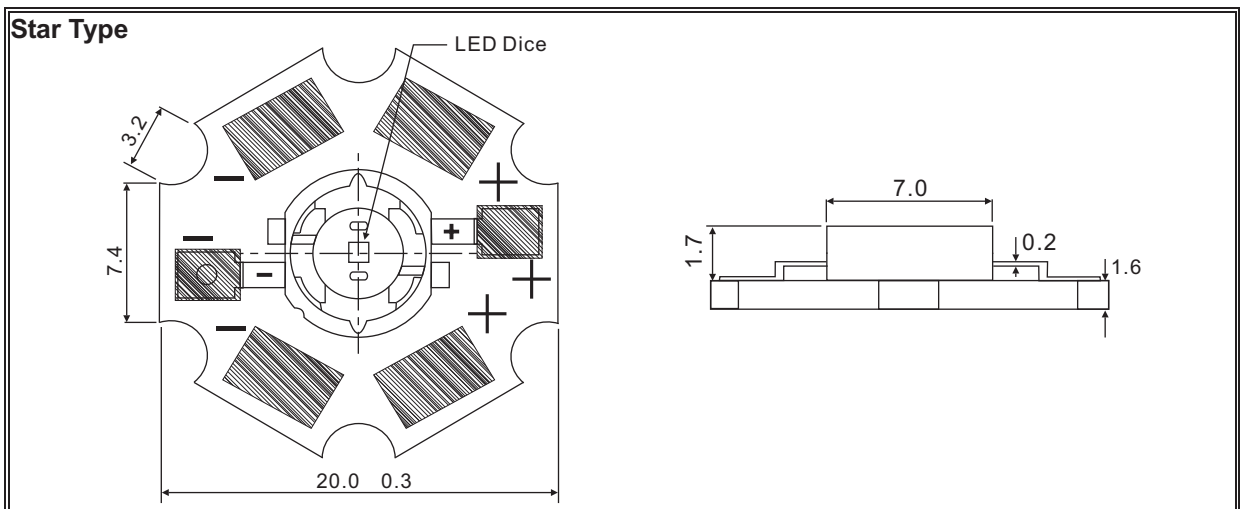
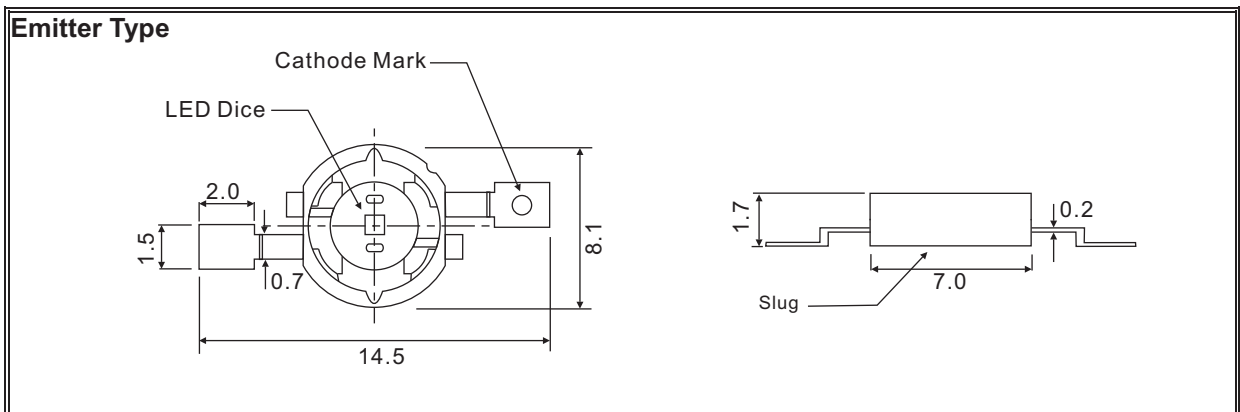


**HUEY JANN ELECTRONICS INDUSTRY CO., LTD.**

No.27 Line 466 Sec.2,Cannng-nan Rd. Wu-chi Town Taichung Shien, Taiwan, R.O.C.

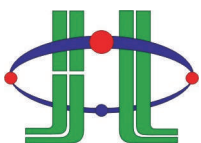
TEL:+886-4-26393976 FAX:+886-4-26393125

PACKAGE DIMENSIONS:



NOTE:

- 1.All dimensions are in millimeter.
- 2.Lead spacing in measured where the lead emerge from the package.
- 3.prodruded resin under flange is 1.5mm max.
- 4.specifications are subject to change without notice.
- 5.Tolerance is 0.3mm unless otherwise noted.
- 6.Driving LED without heat sinking device is forbidden.
- 7.It is strongly recommended that the temperature of lead be not higher than 55°C.
- 8.Proper current derating must be observed to maintain junction temperature below the maximum.
- 9.LEDs are not designed to be driven in reserve bias.



**HUEY JANN ELECTRONICS INDUSTRY CO., LTD.**

No.27 Line 466 Sec.2,Cannng-nan Rd. Wu-chi Town Taichung Shien, Taiwan, R.O.C.

TEL:+886-4-26393976 FAX:+886-4-26393125

**ABSOLUTE MAXIMUM RATINGS**

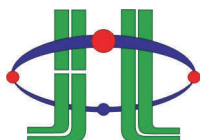
TA=25°C

PARAMETER	SYMBOL		MAX. RATING	UNIT
Continuous Forward Current	IF	Min	1050	mA
		Max	1400	
Peak Forward Current *1	IFM		1500	mA
Electrostatic Discharge(HBM)	ESD		4000	V
LED Junction Temperature	Tj		135	°C
Aluminum-core PCB Temperature	Tac		105	°C
Operating Temperature	Topr		-40 ~ +110	°C
Storage Temperature	Tstg		-40 ~ +120	°C
Manual Soldering Temperature 260 °C for 5 seconds max. *2 *3				

\*1.Duty Ratio=0.1%,Pulse Width=10us.

\*2.Iron soldering high temperature will not cause damage to the dice. But be aware of the high temperature will not only make the epoxy soften but also cause the lead moving and the gold wire broken and even open. So before returning to the normal temperatures PLEASE AVOID any serious pressure on the top of epoxy and lead.

\*3.Measured at leads, lens temperature must not exceed 120°C during lead soldering and slug attach. Soldering by general IR reflow, Vapor phase reflow and wave soldering on this system product is unsuitable. Selective heating of the leads limit lead soldering, such as by hot bar reflow, fiber focussed IR, or hand soldering. The package back plane (slug) may not be attached by soldering, but rather with a thermally conductive adhesive. Electrical insulation between the slug and the board is necessary. Please consult welding matters needing attention.



**HUEY JANN ELECTRONICS INDUSTRY CO., LTD.**

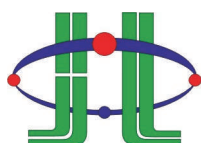
No.27 Line 466 Sec.2,Cann-g-nan Rd. Wu-chi Town Taichung Shien, Taiwan, R.O.C.

TEL:+886-4-26393976 FAX:+886-4-26393125

ELECTRIC-OPTICAL CHARACTERISTICS

TA=25°C

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
View Angle	2θ1/2	IF=1050mA		110		deg
Forward Voltage	VF			4.5	4.8	V
		IF=1400mA		4.7	5.0	
Color Rendering Index For <b>4000°K</b>	CRI			75		
Color Rendering Index For <b>3300°K</b>	CRI			70		
Thermal Resistance Junction To Case	$R\theta_{J-C}$	IF=1050mA		8		°C/W
Temperature Coefficient Of Forward Voltage	$\Delta V_F/\Delta T$			-2		mV/°C



**HUEY JANN ELECTRONICS INDUSTRY CO., LTD.**

No.27 Line 466 Sec.2,Cannng-nan Rd. Wu-chi Town Taichung Shien, Taiwan, R.O.C.

TEL:+886-4-26393976 FAX:+886-4-26393125

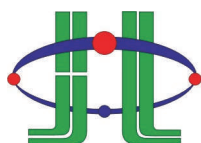
ELECTRIC-OPTICAL CHARACTERISTICS FOR LUMINOUS INTENSITY

TA=25°C

ITEM	SYMBOL	TEST CONDITION	MIN	TYP	UNIT
HPR8C-48K5BG	IV	IF=1050mA		85	lm
HPR8C-49K5WG				235	
HPR8C-49K5WGA				280	
HPR8C-49K5YWG(4000°K)				225	
HPR8C-49K5YWGA(4000°K)				265	
HPR8C-49K5YWG				208	
HPR8C-49K5YWGA				245	

ITEM	SYMBOL	TEST CONDITION	MIN	TYP	UNIT
HPR8C-48K5BG	IV	IF=1400mA		92	lm
HPR8C-49K5WG				250	
HPR8C-49K5WGA				300	
HPR8C-49K5YWG(4000°K)				238	
HPR8C-49K5YWGA(4000°K)				285	
HPR8C-49K5YWG				221	
HPR8C-49K5YWGA				265	

\*Tolerance: 15% HUEY-JANN measuring equipment : EXELTRON 2001. 2.S370 made by U.D.T.



**HUEY JANN ELECTRONICS INDUSTRY CO., LTD.**

No.27 Line 466 Sec.2,Cannng-nan Rd. Wu-chi Town Taichung Shien, Taiwan, R.O.C.

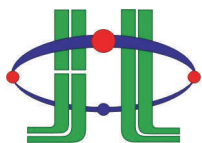
TEL:+886-4-26393976 FAX:+886-4-26393125

ELECTRIC-OPTICAL CHARACTERISTICS FOR COLOR TEMPERATURE

TA=25°C

ITEM	SYMBOL		TEST CONDITION	TYP	UNIT
Blue	Wavelength	$\lambda p$	IF=1050mA	462	nm
		$\lambda d$		465	
Pure White	CCT			6000	°K
Nature White				4000	
Warm White				3300	

\*Tolerance: 15% HUEY-JANN measuring equipment : EXELTRON 2001. 2.S370 made by U.D.T.



**HUEY JANN ELECTRONICS INDUSTRY CO., LTD.**

No.27 Line 466 Sec.2,Cannng-nan Rd. Wu-chi Town Taichung Shien, Taiwan, R.O.C.

TEL:+886-4-26393976 FAX:+886-4-26393125

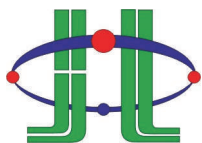
RELIABILITY TEST

Endurance Test

Test Item	Reference Standard	Test Conditions	Result
Operation Life	MIL-STD-750:1026 MIL-STD-883:1005 JIS-C-7021 :B-1	Connect with a power if=1050mA Ta=Under room temperature Test Time=1,000hrs	0/22
High Temperature High Humidity Storage	MIL-STD-202:103B JIS-C-7021 :B-11	Ta=+85°C 5°C RH=80% ~ 85% Test Time=1,000hrs	0/22
High Temperature Storage	MIL-STD-883:1008 JIS-C-7021 :B-10	High Ta=+120°C 5°C Test Time=1,000hrs	0/22
Low Temperature Storage	JIS-C-7021 :B-12	Low Ta=-40°C 5°C Test Time=1,000hrs	0/22

\*Failure Criteria:

1. VF arise  $\geq$  10%
2. IV decline  $\geq$  30%
3. A failure is an LED that is open or shorted



**HUEY JANN ELECTRONICS INDUSTRY CO., LTD.**

No.27 Line 466 Sec.2,Cannng-nan Rd. Wu-chi Town Taichung Shien, Taiwan, R.O.C.

TEL:+886-4-26393976 FAX:+886-4-26393125

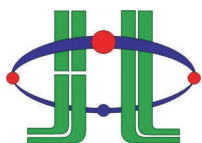
RELIABILITY TEST

➤ Environmental Test

Test Item	Reference Standard	Test Conditions	Result
Temperature Cycling	MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1010 JIS-C-7021 :A-4	-40°C ~ +25°C ~ +85°C ~ +25°C 60min 20min 60min 20min Test Time=200cycle	0/22
Thermal Shock	MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1010	-40°C 5°C ~ +110°C 5°C 20min 20min Test Time=200cycle	0/22

\*Failure Criteria:

1. VF arise  $\geq$  10%
2. IV decline  $\geq$  30%
3. A failure is an LED that is open or shorted

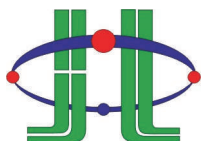
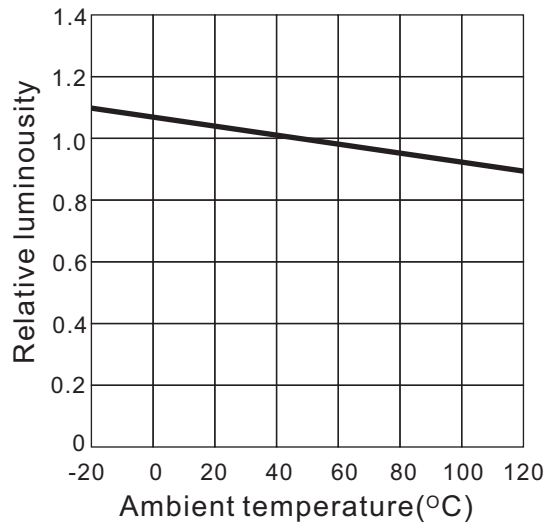
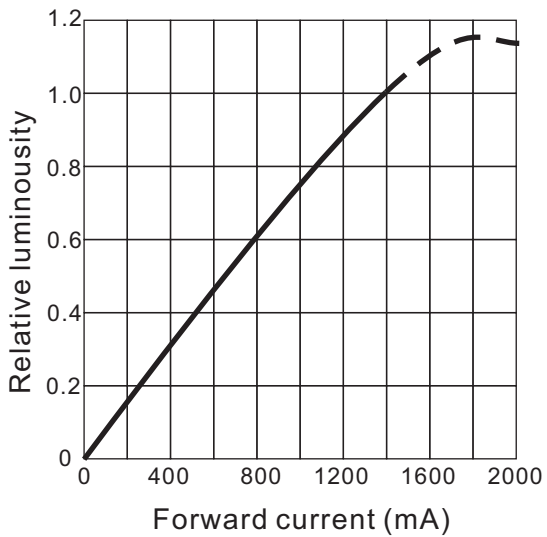
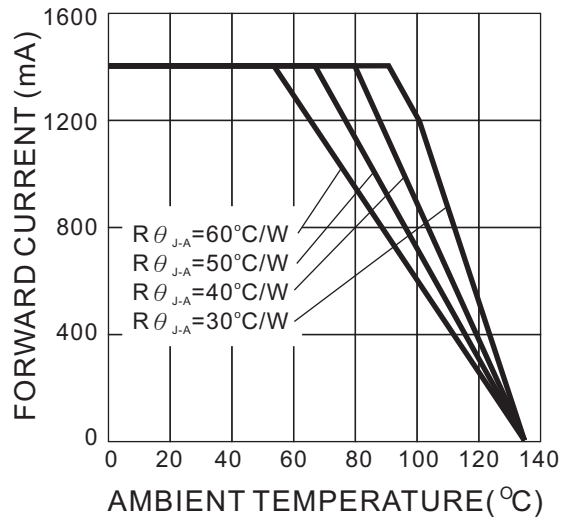
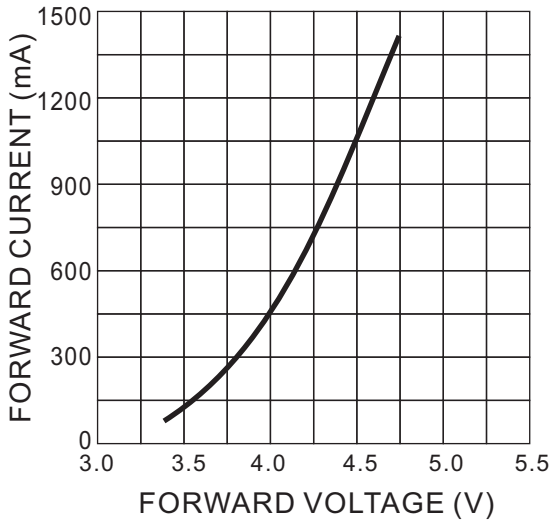


**HUEY JANN ELECTRONICS INDUSTRY CO., LTD.**

No.27 Line 466 Sec.2,Canng-nan Rd. Wu-chi Town Taichung Shien, Taiwan, R.O.C.

TEL:+886-4-26393976 FAX:+886-4-26393125

TYPICAL ELECTRICAL OPTICAL CHARACTERISTICS CURVES

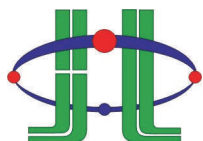
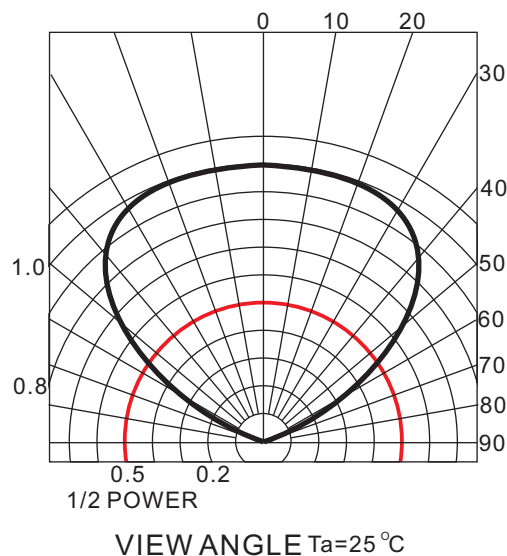
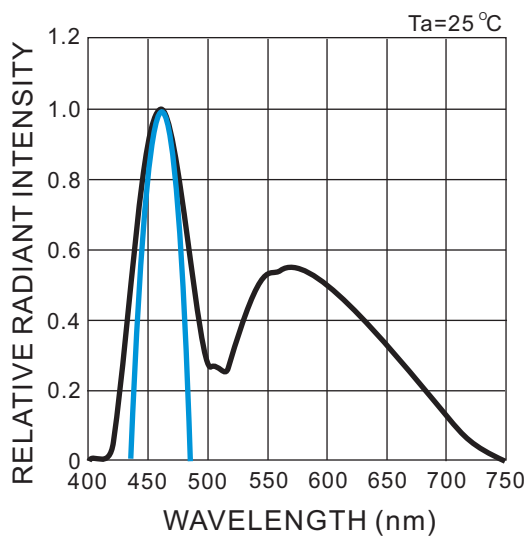
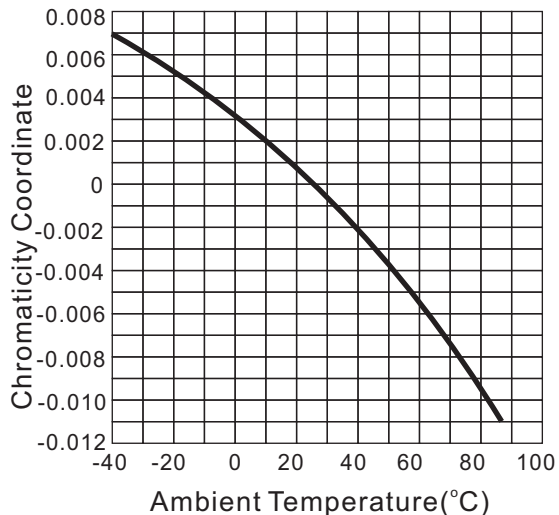
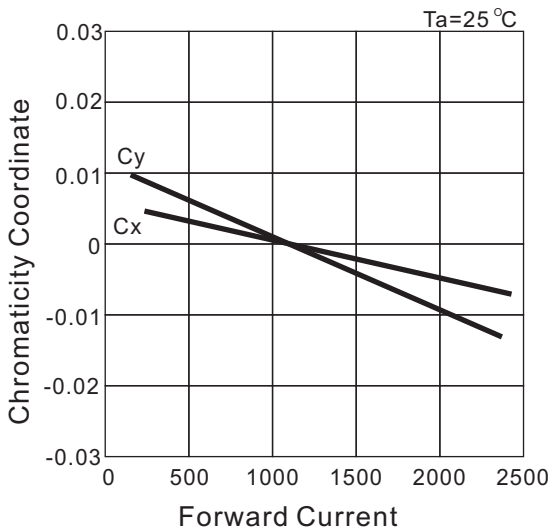


**HUEY JANN ELECTRONICS INDUSTRY CO., LTD.**

No.27 Line 466 Sec.2,Cannng-nan Rd. Wu-chi Town Taichung Shien, Taiwan, R.O.C.

TEL:+886-4-26393976 FAX:+886-4-26393125

TYPICAL ELECTRICAL OPTICAL CHARACTERISTICS CURVES



**HUEY JANN ELECTRONICS INDUSTRY CO., LTD.**

No.27 Line 466 Sec.2,Canng-nan Rd. Wu-chi Town Taichung Shien, Taiwan, R.O.C.

TEL:+886-4-26393976 FAX:+886-4-26393125

Brightness Bin Selection

For HPR8C-4xK5xGx

Ta=25°C

Item	Emitter Color	BIN CODE	Brightness in lm	
			Minimum	Maximum
HPR8C-48K5BGx	Blue	K	65	85
		L	85	110
HPR8C-49K5WGx	Pure White	P	186	240
		Q	240	310
HPR8C-49K5YWGx(4000°K)	Nature White	P	186	240
		Q	240	310
HPR8C-49K5YWGx	Warm White	P	186	240

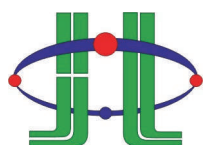
For HPR8C-4xK5xGAx

Ta=25°C

Item	Emitter Color	BIN CODE	Brightness in lm	
			Minimum	Maximum
HPR8C-49K5WGAx	Pure White	Q	240	310
HPR8C-49K5YWGAx(4000°K)	Nature White	Q	240	310
HPR8C-49K5YWGAx	Warm White	P	186	240
		Q	240	310

NOTE:

1. Test Condition at IF=1050mA.
2. Brightness tolerance for each bin limit is ±15%



**HUEY JANN ELECTRONICS INDUSTRY CO., LTD.**

No.27 Line 466 Sec.2,Canng-nan Rd. Wu-chi Town Taichung Shien, Taiwan, R.O.C.

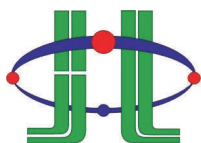
TEL:+886-4-26393976 FAX:+886-4-26393125

Color Bin Selection

I<sub>F</sub>=1050mA

Bin	Dominate Wavelength	
	Minimum	Maximum
4	460.0	464.0
5	464.0	467.0
6	467.0	470.0
7	470.0	473.0

\*Color tolerance for each bin limit is  $\pm 0.5\text{nm}$



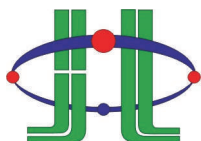
**HUEY JANN ELECTRONICS INDUSTRY CO., LTD.**

No.27 Line 466 Sec.2,Canng-nan Rd. Wu-chi Town Taichung Shien, Taiwan, R.O.C.

TEL:+886-4-26393976 FAX:+886-4-26393125

Pure White Color Bin Selection

Bin	CCT(°K)	Chromaticity Coordinates				
	TYP					
T1	9000	x	0.274	0.292	0.299	0.283
		y	0.301	0.322	0.300	0.284
T2	9000	x	0.283	0.299	0.303	0.290
		y	0.284	0.300	0.283	0.270
T3	8000	x	0.292	0.303	0.308	0.299
		y	0.322	0.333	0.311	0.300
T4	8000	x	0.299	0.308	0.311	0.303
		y	0.300	0.311	0.293	0.283
T5	6700	x	0.301	0.314	0.316	0.305
		y	0.342	0.355	0.333	0.322
T6	6700	x	0.305	0.316	0.317	0.308
		y	0.322	0.333	0.320	0.311
T7	6700	x	0.308	0.317	0.319	0.311
		y	0.311	0.320	0.300	0.293
T8	6000	x	0.314	0.329	0.329	0.316
		y	0.355	0.369	0.345	0.333
T9	6000	x	0.316	0.329	0.329	0.317
		y	0.333	0.345	0.331	0.320
T10	6000	x	0.317	0.329	0.329	0.319
		y	0.320	0.331	0.310	0.300
T11	5300	x	0.329	0.348	0.346	0.329
		y	0.369	0.385	0.359	0.345
T12	5300	x	0.329	0.346	0.329	0.344
		y	0.345	0.359	0.331	0.344
T13	5300	x	0.344	0.329	0.343	0.329
		y	0.344	0.331	0.331	0.320
T14	4750	x	0.348	0.367	0.362	0.346
		y	0.385	0.400	0.372	0.359
T15	4750	x	0.346	0.362	0.360	0.344
		y	0.359	0.372	0.357	0.344
<b>Tolerance</b>			x ± 0.02		y ± 0.02	



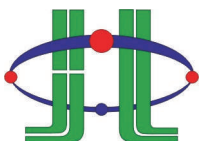
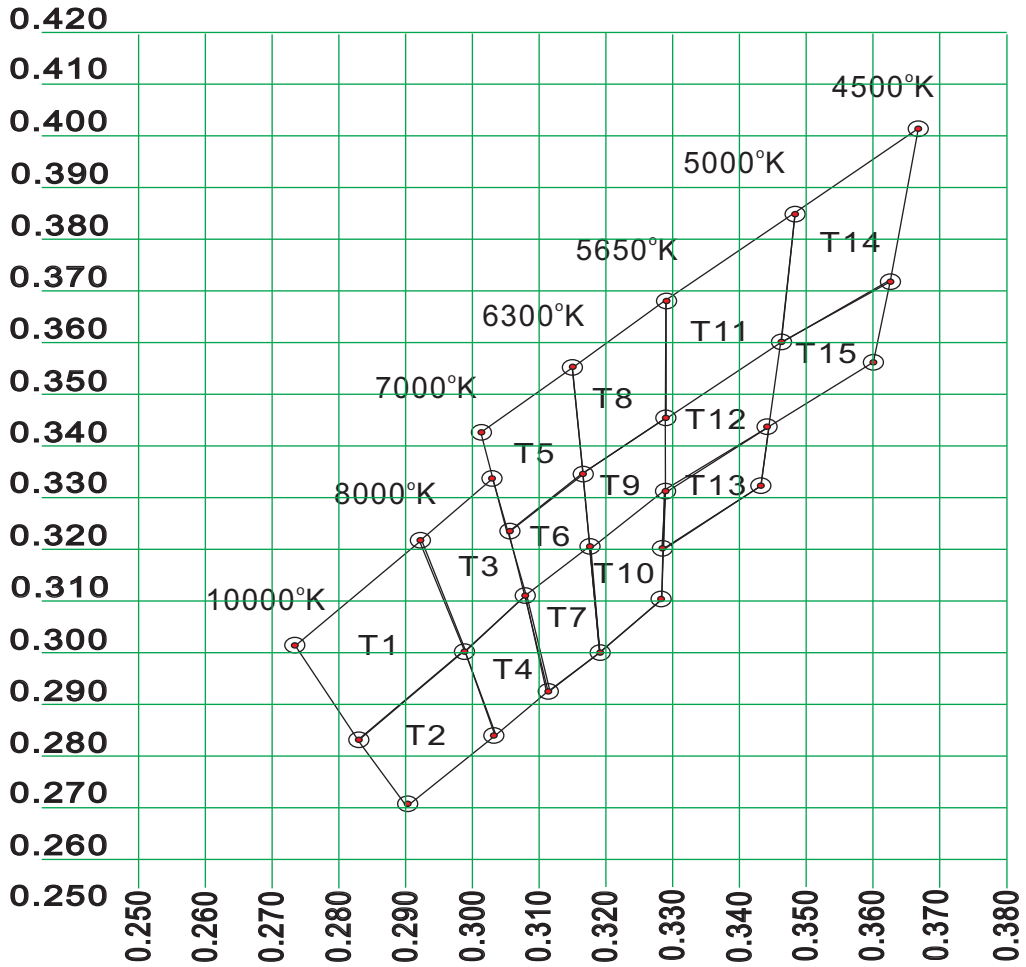
**HUEY JANN ELECTRONICS INDUSTRY CO., LTD.**

No.27 Line 466 Sec.2,Canng-nan Rd. Wu-chi Town Taichung Shien, Taiwan, R.O.C.

TEL:+886-4-26393976 FAX:+886-4-26393125

Pure White Color Bin Selection

CIE Light Color Chart



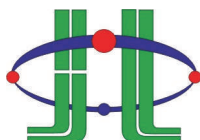
**HUEY JANN ELECTRONICS INDUSTRY CO., LTD.**

No.27 Line 466 Sec.2,Canng-nan Rd. Wu-chi Town Taichung Shien, Taiwan, R.O.C.

TEL:+886-4-26393976 FAX:+886-4-26393125

Nature White Color Bin Selection

Bin	CCT(°K)	Chromaticity Coordinates				
	TYP					
N1	4300	x	0.367	0.385	0.381	0.364
		y	0.400	0.412	0.393	0.382
N2	4300	x	0.364	0.381	0.378	0.362
		y	0.382	0.393	0.382	0.371
N3	4300	x	0.362	0.378	0.374	0.359
		y	0.371	0.382	0.365	0.355
N4	4300	x	0.359	0.374	0.370	0.357
		y	0.355	0.365	0.351	0.342
N5	3950	x	0.385	0.402	0.396	0.381
		y	0.412	0.422	0.403	0.393
N6	3950	x	0.381	0.396	0.392	0.378
		y	0.393	0.403	0.390	0.382
N7	3950	x	0.378	0.392	0.387	0.374
		y	0.382	0.390	0.373	0.365
N8	3950	x	0.370	0.387	0.382	0.357
		y	0.351	0.373	0.359	0.342
N9	3650	x	0.402	0.420	0.414	0.396
		y	0.422	0.432	0.416	0.403
N10	3650	x	0.396	0.414	0.408	0.392
		y	0.403	0.416	0.399	0.390
N11	3650	x	0.392	0.408	0.402	0.387
		y	0.390	0.399	0.382	0.373
N12	3650	x	0.387	0.402	0.396	0.382
		y	0.373	0.382	0.367	0.359
<b>Tolerance</b>			x ± 0.02		y ± 0.02	



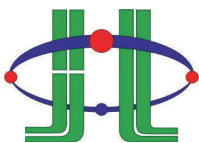
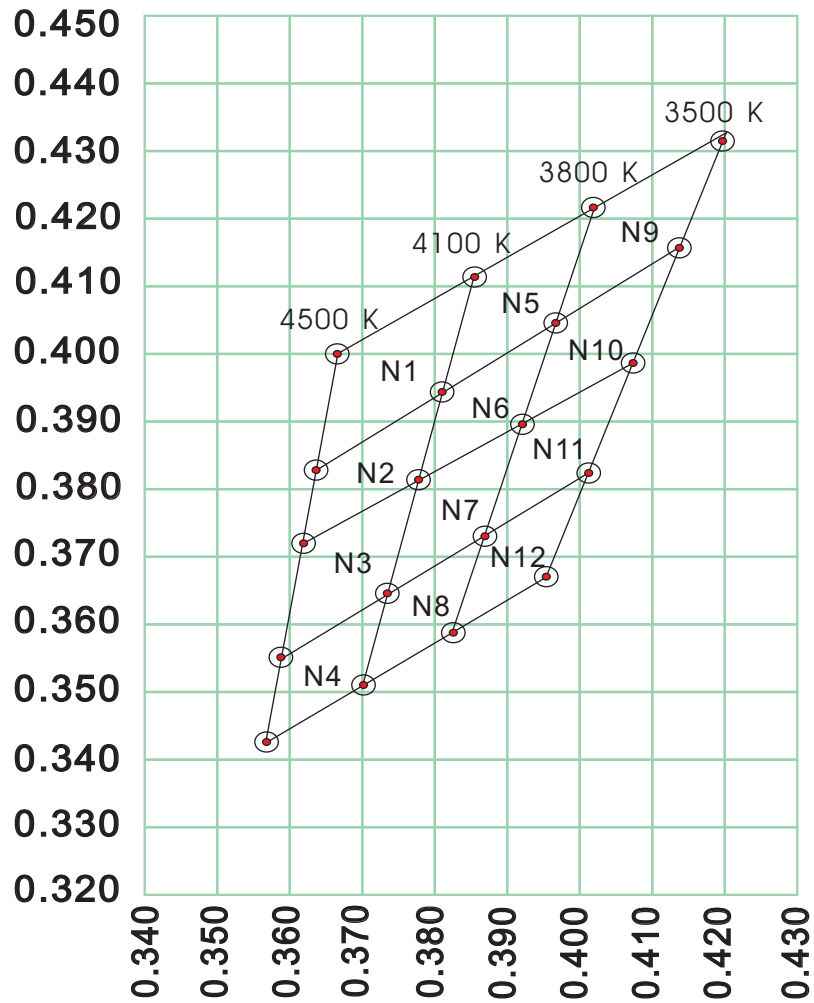
**HUEY JANN ELECTRONICS INDUSTRY CO., LTD.**

No.27 Line 466 Sec.2,Cannng-nan Rd. Wu-chi Town Taichung Shien, Taiwan, R.O.C.

TEL:+886-4-26393976 FAX:+886-4-26393125

Nature White Color Bin Selection

CIE Light Color Chart



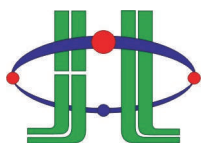
HUEY JANN ELECTRONICS INDUSTRY CO., LTD.

No.27 Line 466 Sec.2,Canng-nan Rd. Wu-chi Town Taichung Shien, Taiwan, R.O.C.

TEL:+886-4-26393976 FAX:+886-4-26393125

Warm White Color Bin Selection

Bin	CCT(°K)	Chromaticity Coordinates				
	TYP	x	y	z	u	v
C10	3640	x	0.402	0.417	0.409	0.392
		y	0.423	0.431	0.400	0.391
C11	3500	x	0.402	0.438	0.424	0.392
		y	0.423	0.440	0.406	0.391
C12	3640	x	0.392	0.409	0.402	0.387
		y	0.391	0.400	0.382	0.374
C13	3370	x	0.409	0.424	0.416	0.402
		y	0.400	0.406	0.389	0.382
C14	3500	x	0.387	0.416	0.410	0.383
		y	0.374	0.389	0.374	0.360
C15	3150	x	0.438	0.454	0.438	0.424
		y	0.440	0.446	0.412	0.406
C16	3150	x	0.424	0.438	0.429	0.416
		y	0.406	0.412	0.394	0.389
C17	2950	x	0.454	0.471	0.453	0.438
		y	0.446	0.451	0.416	0.412
C18	2950	x	0.438	0.453	0.444	0.429
		y	0.412	0.416	0.399	0.394
<b>Tolerance</b>		x ± 0.02			y ± 0.02	



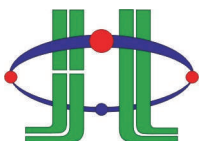
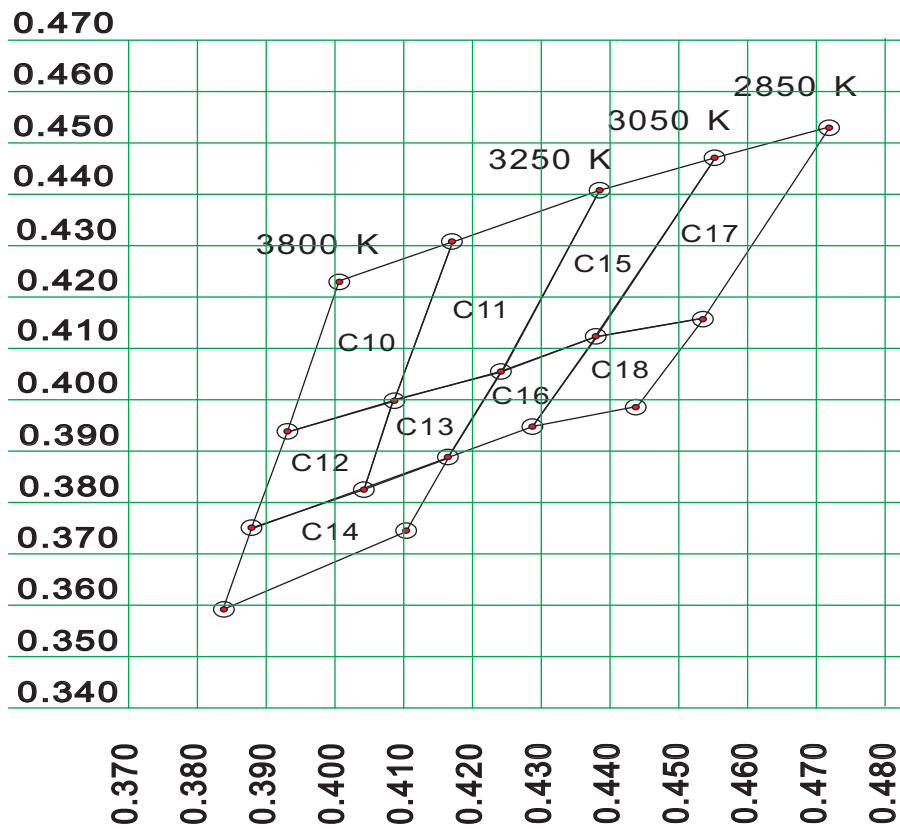
**HUEY JANN ELECTRONICS INDUSTRY CO., LTD.**

No.27 Line 466 Sec.2,Canng-nan Rd. Wu-chi Town Taichung Shien, Taiwan, R.O.C.

TEL:+886-4-26393976 FAX:+886-4-26393125

Warm White Color Bin Selection

➤ CIE Light Color Chart

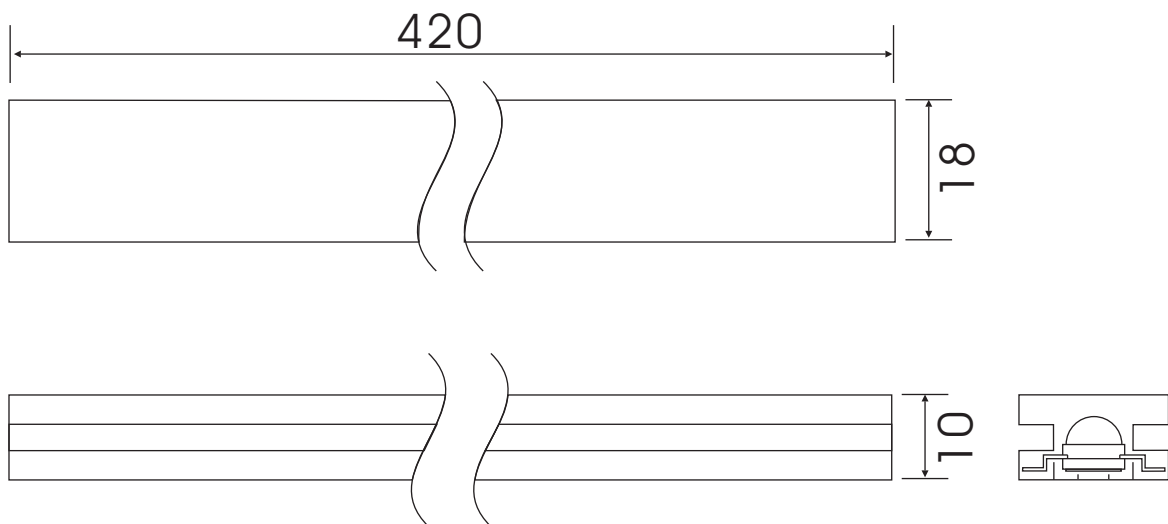


**HUEY JANN ELECTRONICS INDUSTRY CO., LTD.**

No.27 Line 466 Sec.2,Canng-nan Rd. Wu-chi Town Taichung Shien, Taiwan, R.O.C.

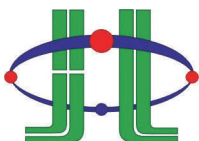
TEL:+886-4-26393976 FAX:+886-4-26393125

Package Dimension For Emitter Type



NOTE:

1. Dimensions are specified as follows: mm.
2. Tolerance is 0.3mm unless otherwise noted.
3. 50 pcs emitters per tube.
4. 80 tubes per inside box.
5. 4 inside box per outside box.

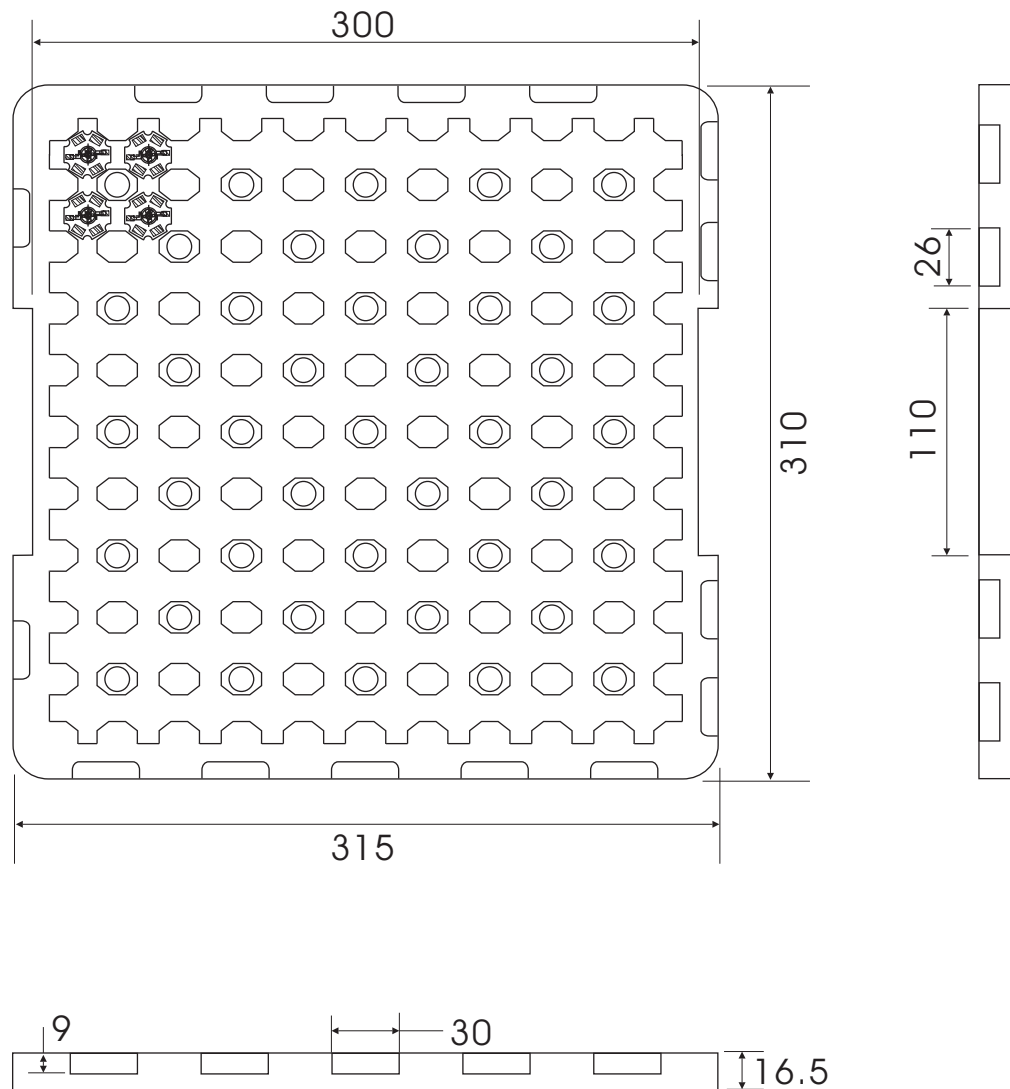


**HUEY JANN ELECTRONICS INDUSTRY CO., LTD.**

No.27 Line 466 Sec.2,Canng-nan Rd. Wu-chi Town Taichung Shien, Taiwan, R.O.C.

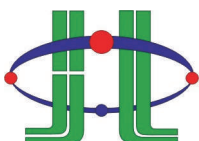
TEL:+886-4-26393976 FAX:+886-4-26393125

Package Dimension For Star Type



NOTE:

1. Dimensions are specified as follows: mm.
2. Tolerance is 0.3mm unless otherwise noted.
3. 100pcs star per tray.
4. 10 trays per box.



**HUEY JANN ELECTRONICS INDUSTRY CO., LTD.**

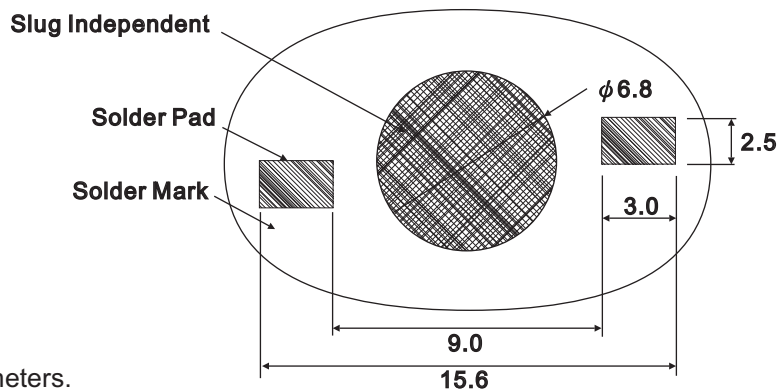
No.27 Line 466 Sec.2,Canng-nan Rd. Wu-chi Town Taichung Shien, Taiwan, R.O.C.

TEL:+886-4-26393976 FAX:+886-4-26393125

### Requirements to user For Emitter Type

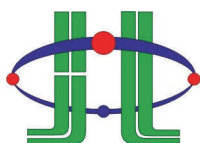
The LED products by HUEY-JANN is designed, manufactured, and sold aiming at high standard quality and reliability, however, reliability of electronic apparatus is seen as a product of reliability superior to HUEY-JANN and using status at users. From this point, HUEY-JANN requests user's for following things.

### Recommended Solder Pad Design For Emitter Type



Note:

- 1.All dimensions are in millimeters.
- 2.Electrical isolation is required between Slug and Solder Pad.



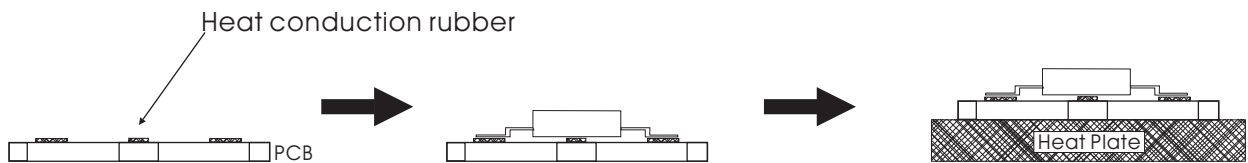
**HUEY JANN ELECTRONICS INDUSTRY CO., LTD.**

No.27 Line 466 Sec.2,Cannng-nan Rd. Wu-chi Town Taichung Shien, Taiwan, R.O.C.

TEL:+886-4-26393976 FAX:+886-4-26393125

**Heat Plate Soldering Condition For Emitter Type**

**a. Soldering Process for Solder Paste**



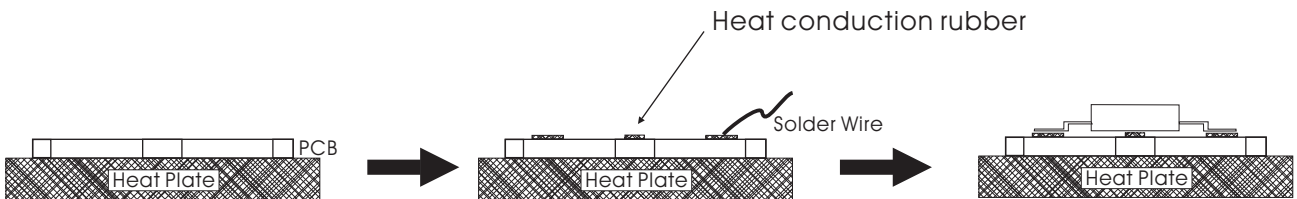
Use Solder Mask to print Solder Paste on PCB.

Place Emitter on PCB.

Put PCB on Heat Plate until Solder Paste melt.

- 1.The Solder Paste should be melted within 10 seconds.
- 2.Take out PCB out from Heat Plate within 15 seconds.

**b. Soldering Process for Solder Wire**



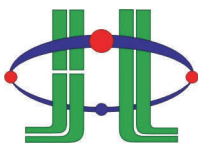
Put PCB on Heat Plate.

Place Solder Wire to the solder pad of PCB.

Put Emitter on PCB. Take the PCB out from Heat Plate within 10 seconds.

**NOTE:**

- 1.Heat plate temperature: 230°C max for Lead Solder and 260°C max for Lead-Free Solder.
- 2.When soldering, do not put stress on the LEDs during heating.
- 3.After soldering, do not warp the circuit board.

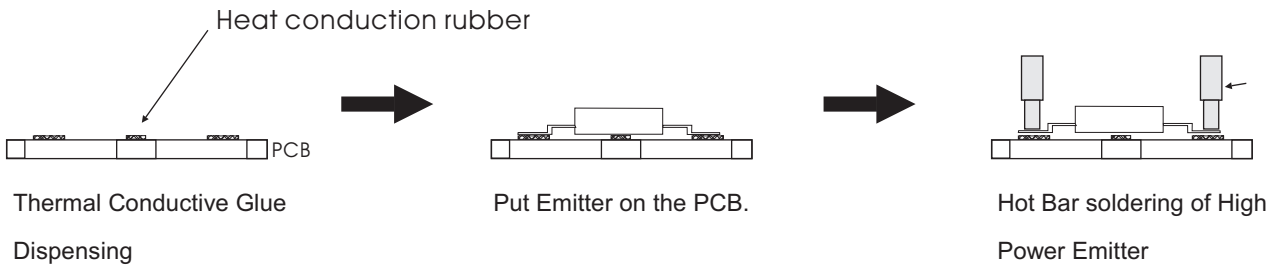


**HUEY JANN ELECTRONICS INDUSTRY CO., LTD.**

No.27 Line 466 Sec.2,Cannng-nan Rd. Wu-chi Town Taichung Shien, Taiwan, R.O.C.

TEL:+886-4-26393976 FAX:+886-4-26393125

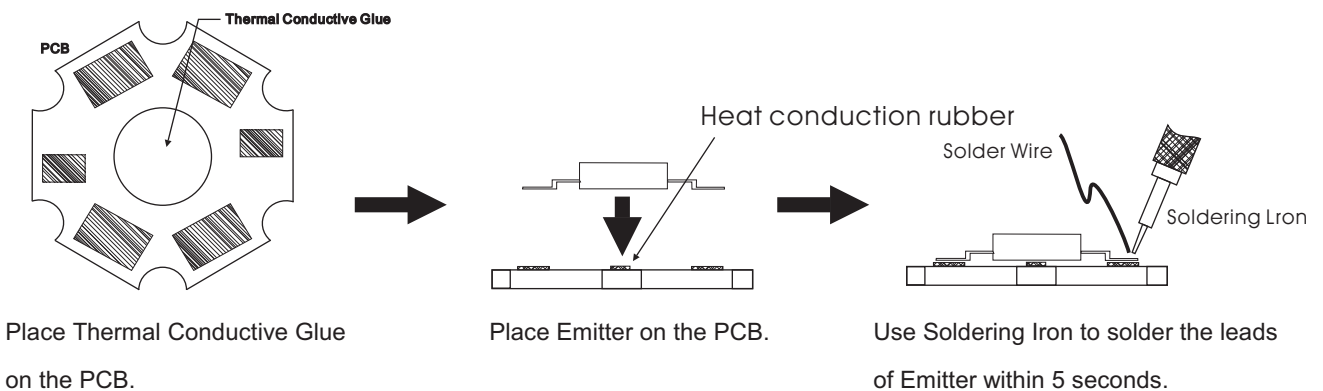
**Soldering Process For Hot Bar For Emitter Type**



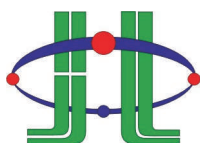
**NOTE:**

- 1.Hot Bar temperature: 230°C max for Lead Solder and 260°C max for Lead-Free Solder.
- 2.When soldering, do not put stress on the LEDs during heating.
- 3.After soldering, do not warp the circuit board.

**Manual Hand Soldering For Emitter Type**



- 1.Solder tip temperature: 230°C max for Lead Solder and 260°C max for Lead-Free Solder.
- 2.Avoiding damage to the emitter or to the PCB dielectric layer. Damage to the epoxy layer can cause
- 3.Do not let the solder contact from solder pad to back-side of PCB. This one will cause a short circuit and damage emitter.



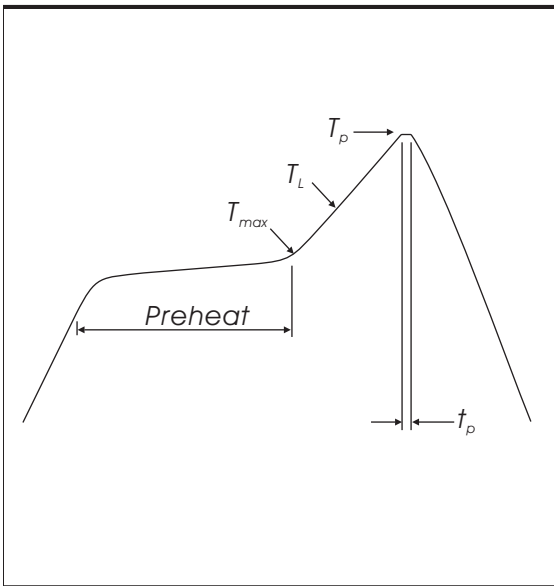
**HUEY JANN ELECTRONICS INDUSTRY CO., LTD.**

No.27 Line 466 Sec.2,Cannng-nan Rd. Wu-chi Town Taichung Shien, Taiwan, R.O.C.

TEL:+886-4-26393976 FAX:+886-4-26393125

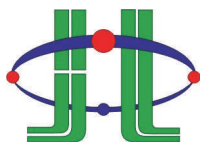
Reflow Solder Condition For Emitter Type

Profile Feature	Sn-Pb Eutectic Assembly	Lead-Free Assembly
Average Ramp-Up Rate ( $T_{max}$ To $T_p$ )	3 °C/sec max	3 °C/sec max
Average Ramp-Down Rate	6 °C/sec max	6 °C/sec max
Preheat Temperature Min Temperature Max Time	100 °C 150 °C 60-120sec	150 °C 200 °C 60-180sec
Time Maintained Above Temperature ( $T_L$ ) Time Max	180 °C 150sec	210 °C 150sec
Peak Temperature ( $T_p$ )	240 °C	260 °C
Time Within 5°C of Actual Peak Temperature ( $t_p$ )	10 ~ 30sec	20 ~ 40sec



Note:

- 1.All temperature regarding topside of the package, measured on the package body surface.
- 2.After the LEDs have been soldered repairing should not be done. When repairing is unavoidable, a heat plate should be used. It should be confirmed beforehand whether the characteristics of LEDs will or will not be damaged by repairing.
- 3.Reflow soldering more than two times is not recommended.
- 4.While soldering do not put stress on the LEDs during heating.
- 5.After soldering do not warp the circuit board.





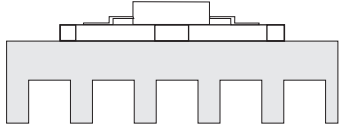
**HUEY JANN ELECTRONICS INDUSTRY CO., LTD.**

No.27 Line 466 Sec.2,Cannng-nan Rd. Wu-chi Town Taichung Shien, Taiwan, R.O.C.

TEL:+886-4-26393976 FAX:+886-4-26393125

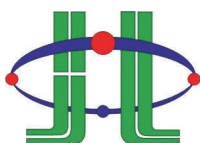
**Conclusion**

Huey Jann provide simple comparison table for High Power LED, you could find your request heat dissipation area from the following table.

	 Free Convection Horizontal Flat Heat Dissipation-Set-up ( Area Require mm <sup>2</sup> )	 Free Convection Vertical Flat Heat Dissipation-Set-up ( Area Require mm <sup>2</sup> )	 Free Convection Finned Heat Dissipation-Set-up ( Area Require mm <sup>2</sup> )
Blue	9,000	7,500	12,000
White	9,000	7,500	12,000

\*TAB in this table is according to highest operating temperature 65°C.

\*Different materials of second heat dissipation device, the surface area of heat sink will be different. Thus, this document is for reference only.

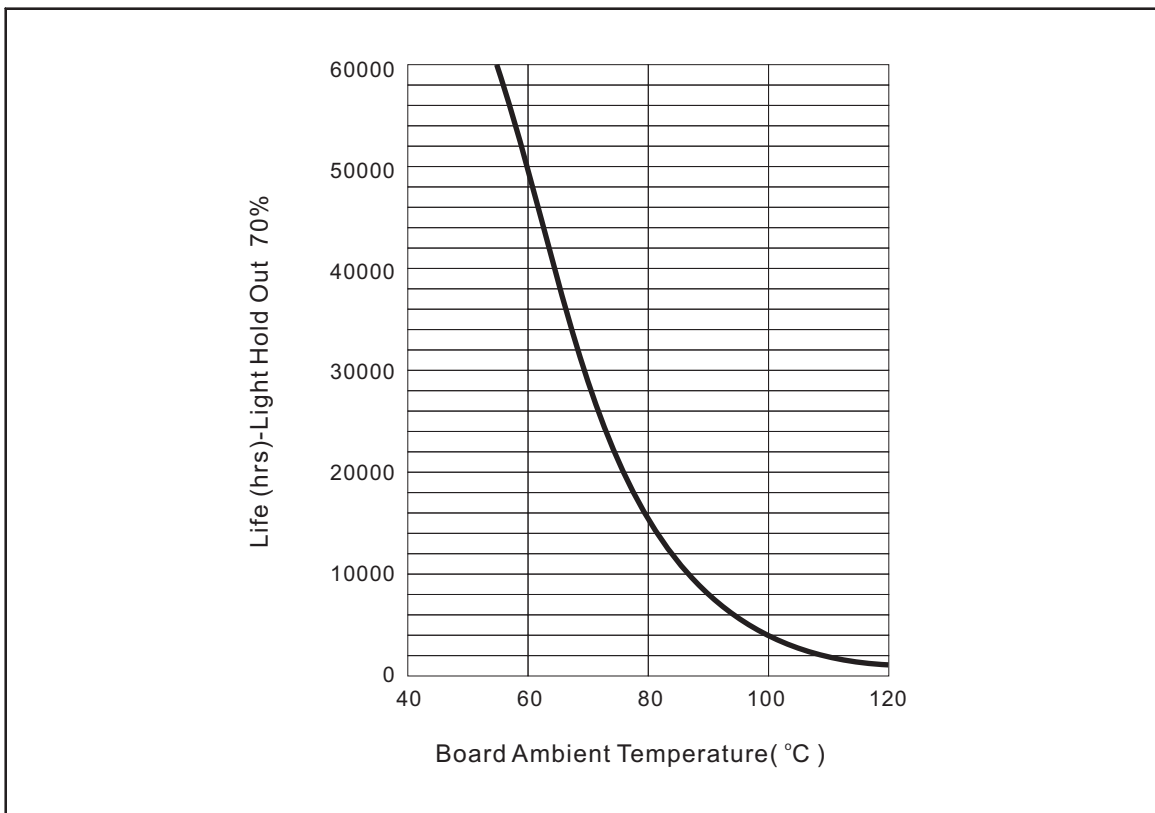
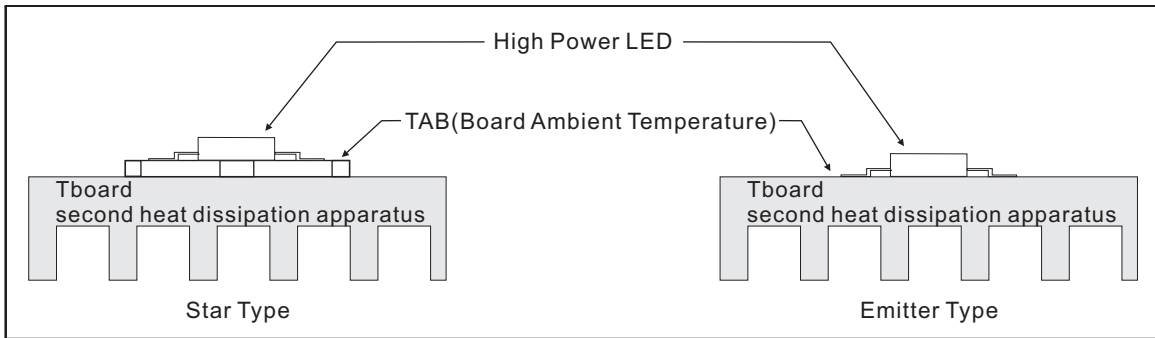


**HUEY JANN ELECTRONICS INDUSTRY CO., LTD.**

No.27 Line 466 Sec.2,Cannng-nan Rd. Wu-chi Town Taichung Shien, Taiwan, R.O.C.

TEL:+886-4-26393976 FAX:+886-4-26393125

TAB Temperature - Life Characteristics Curves

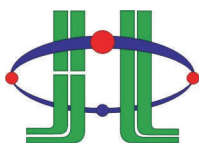


\*Board Ambient Temperature Tolerance 5°C.

\*TAB in this table is according to highest operating temperature 65°C.

\*The TAB is the stable testing value for the product lighted 100% after one hour.

\*Different materials of second heat dissipation device, the surface area of heat sink will be different. Thus, this document is for reference only.



**HUEY JANN ELECTRONICS INDUSTRY CO., LTD.**

No.27 Line 466 Sec.2,Cannng-nan Rd. Wu-chi Town Taichung Shien, Taiwan, R.O.C.

TEL:+886-4-26393976 FAX:+886-4-26393125