DATA SHEET

20Watt High Power LED Low Voltage

Serie: M15016

Wavelength **0462= 462mn**

Brightness **0560= 560lm**

Color: **BL= Blue**

DRW:	Jason	CHKD	Wilson	MATL:	Wilson	TOLERANCE	Mason	DATE	05.01.2011	**20Watt High Power LED Low Voltage**
APPD:	Schumi			FINISH	Jamy		Sheet No.		1 from 14	Serie No.: **M15016**
										Customer:

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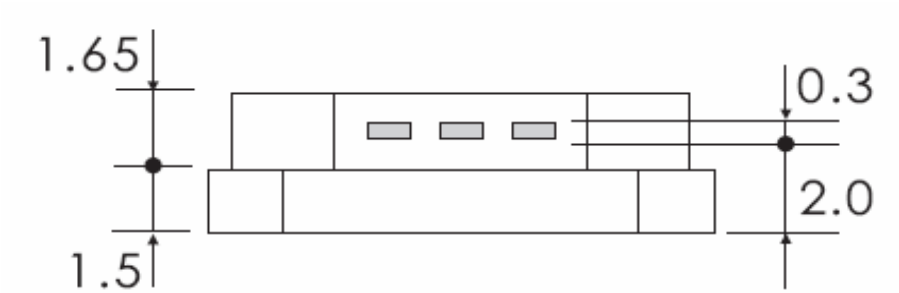
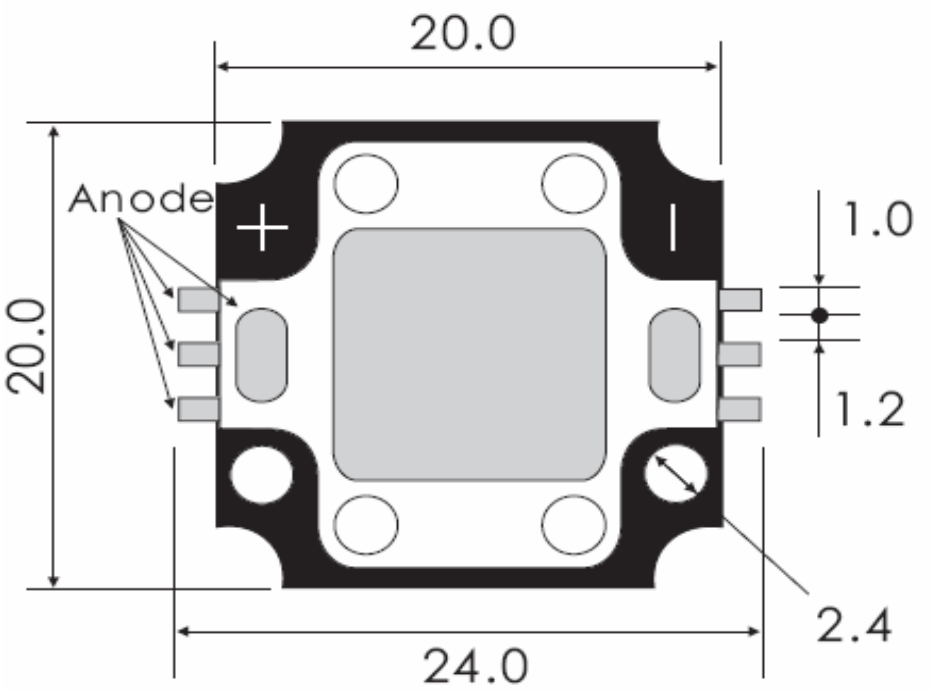
Technical Dimensions





1. All Dimensions are in mm.
2. Lead Spacing in measuremend whre the lead emerge from the package
3. Prodruded resin under flange is 1,5mm max.
4. Tolerance are 0,3mm unless otherwise noted.
5. Specifications are subject to change without notice
6. Driving LED without heat sinking device is forbidden
7. Warps the degree 0,5mm
8. Leds are not designed must to be driven in reverse bias.
9. Proper current derating must be observed to maintain junction temperature below the maximum
10. It is strongly recommended that the temperature of lead be not higher than 55℃.

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www.edcon-components.com
email: info@edcon-components.com

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Features

Long operating life
Instant Light
Superior ESD defense
Low Voltage DC operated
Color bright satured
More energy efficient than incandescent and most halogen lamps

Discription

EDCON-COMPONENTS High Power LED is make of hi-eff AS/TS GaInN chips with precide package technique which makes excellent heat dissipation to reach the advantages of high lunious efficiency, low decay, and long endurance. Now we have these colors available RED, GREEN, BLU, YELLOW, WHITE.

Typical Applications

Decoration Lights
Beacon light
Bathrooms Light
Medical applications
Architectural detail lighting

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Absolute Maximum Ratings

Parameter	Symbol	Max. Rating		Unit
Continuous Forward Current	IF	1750		mA
Peak Forward Current *1	IFM	2000		mA
Electrostatic Discahrge (HBM)	ESD	4000		V
LED Juntion Temperature	Tj	G / B	135	℃
		R / Y	125	
Operating Temperature	Topr	. -40 ~ +110		℃
Storage Temperature	Tstg	. -40 ~ +120		℃

Manual Soldering Temperature 260℃ for 5seconds max . 2

TA=25℃

*1 Duty Ration = 00,1%, Pulse Width=10us.

*2 Iron soldering high temperature will not cause damage to the dice. But be aware of the high temperature will make the epoxy soften 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. We suggest using PWM (Pulse Width Modulation) for driving.

*4 It is recommended to use series as there are several 3pcs. If there are more than 5pcs, please use product with higher power.

Electrical- Optical Characteristics

Parameter	Symbol	Test Cond.	Typ	Unit
View Angel of Half Power	2Ø1/2	1750mA	120	deg
Thermal Resistance Junction to Case	RØ J-C		2,5	℃/W
Temperature Coefficient of Forward Voltage	Δ Vf/Δ T		-2	mV/℃

TA=25℃

Emitting Color	Symbol	Test Cond.	Typ	Max.	Unit
Green	VF	IF=1750mA	10,5	12	V
Yellow			7	9	
Red			7	9	
Blue			10,5	12	
Blue			11,6	13	

TA=25℃

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Electrical Optical Characteristics for Luminious Intensity

Emitting Color	Symbol	Test Cond.	Typ	Unit
Green	VF	IF=1750mA	1330	V
Yellow			1014	
Red			1050	
Blue			560	
Blue			600	
Tolerance: 15% of EDCON- measuring equipments: EXELTRON 2001.2.S370 made by U.D.T:				

TA=25℃

Electrical-Optical Characteristics for Wavelength

Emitting Color	Test Cond.	P	d	Unit
Green	IF=1750mA	520	525	nm
Yellow		595	590	
Red		635	625	
Blue		462	465	
Blue		462	465	
Tolerance: 15% of EDCON- measuring equipments: EXELTRON 2001.2.S370 made by U.D.T:				

TA=25℃

Endurance Test

Test Item	Reference Standard	Test Conditions	Result
Operating Life	MIL-STD-750:1026 MIL-STD-883:1005 JIS-C-7021: B-1	Connect with a power if=700mA Ta=Under room temperature Trest Time = 1000hrs	0/22
High Temperature High Humidity Storage	MIL-STD-202:103B JIS-C-7021: B-11	Ta= +85℃ +/-5℃ RH=80% ~ 85% Test Time = 1000hrs	0/22
High Temperature Storage	MIL-STD-883:1008 JIS-C-7021: B-10	High Ta= +120℃ +/- 5℃ Test Time= 1000hrs	0/22
Low Temperature Storage	JIS-C-7021: B-12	Low Ta= 40℃ +/-5℃ Test Time= 1000hrs	0/22

Failure Criteria:

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

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Environmental Test

Test Item	Reference Standard	Test Conditions	Result
Temperature Cycling	MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-833:1010 JIS-C-7021: A4	.-40℃ ~ +25℃ ~ +85℃ ~ +25℃ 60min 20min 60min 20min Test Time= 200cycles	0/22
Thermal Shock	MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-833:1010	. -40℃ +/- 5℃ ~ +110℃ +/-5℃ 20min 20min. Test Time= 200cycles	0/22

Failure Criteria:

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

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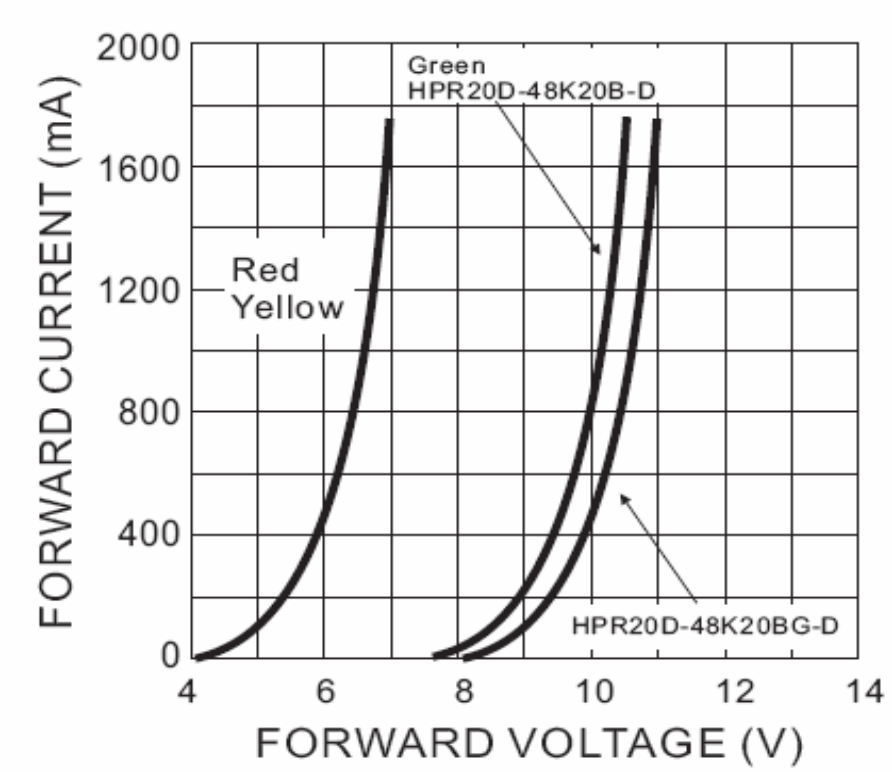
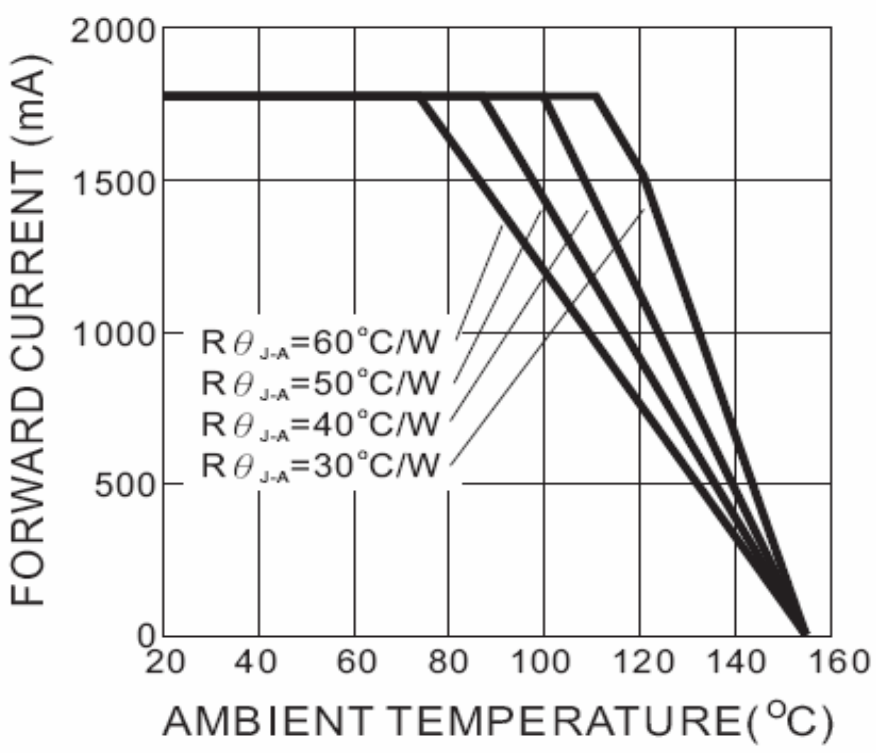
Typical Electrical Optical Characteristics Curves





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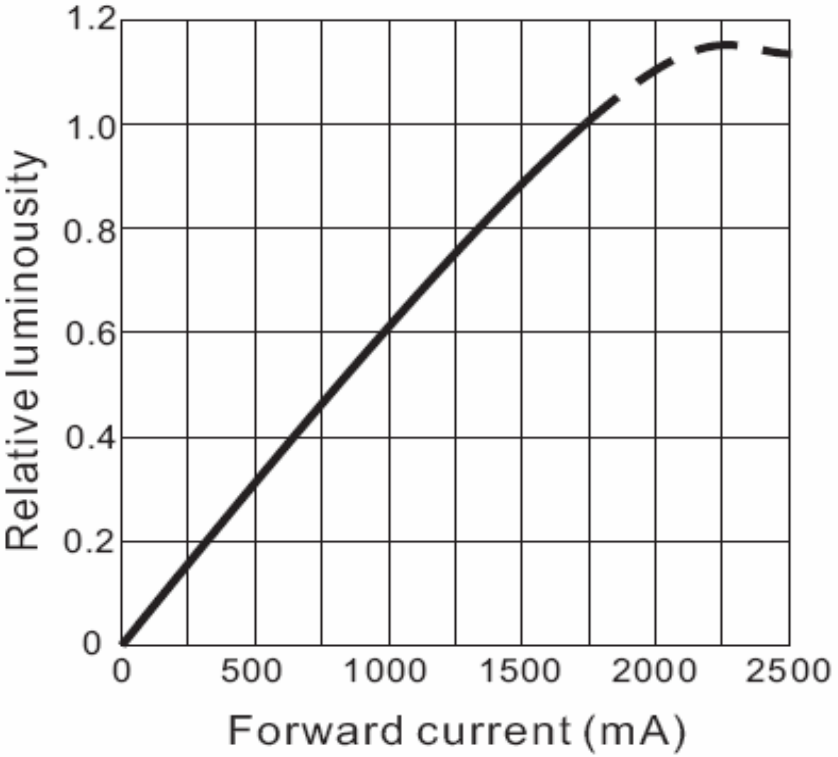
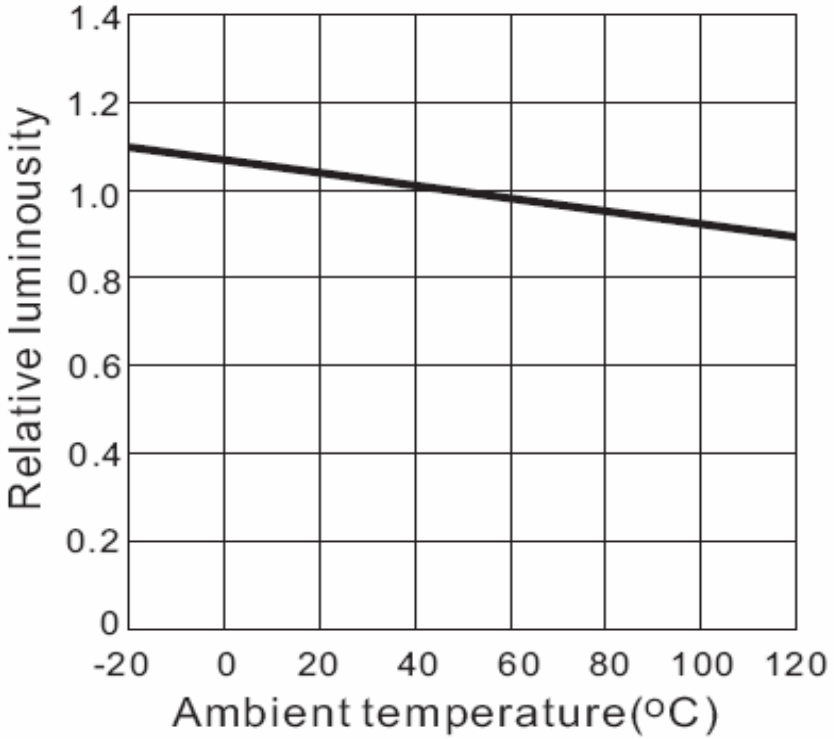
Typical Electrical Optical Characteristics Curves





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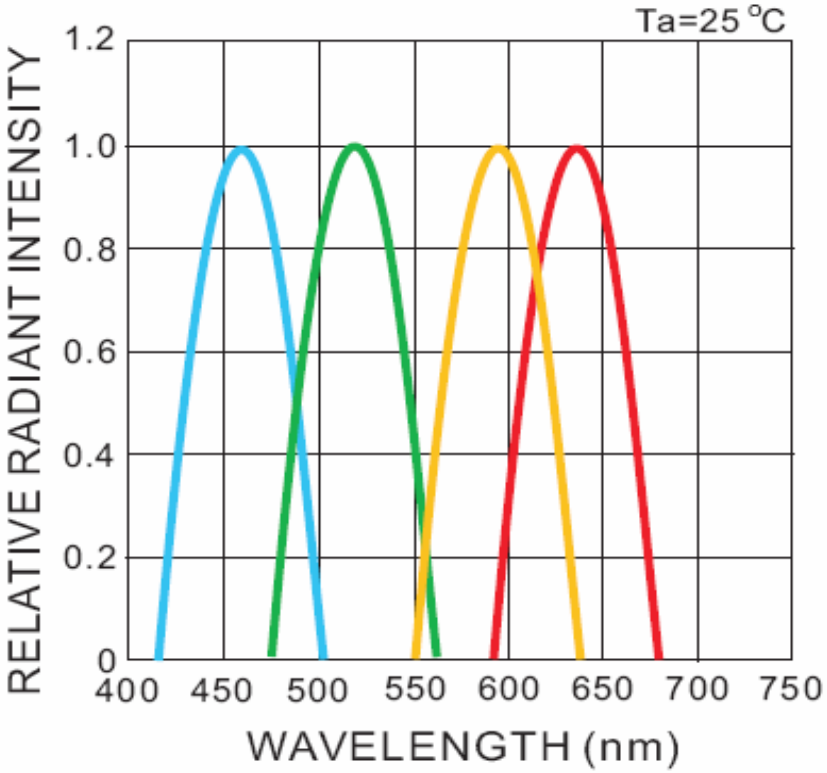
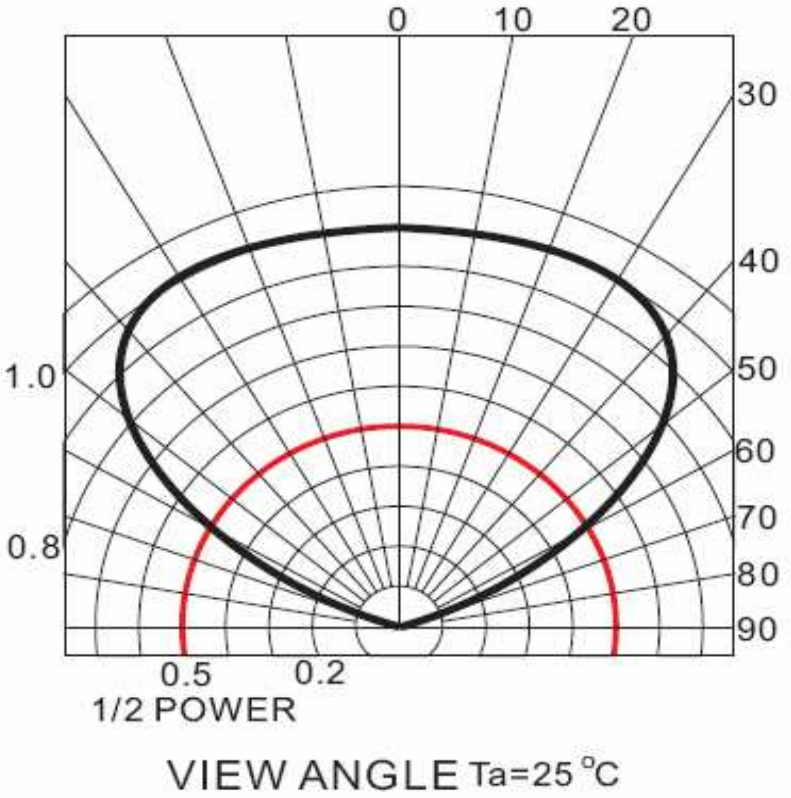
Typical Electrical Optical Characteristics Curves





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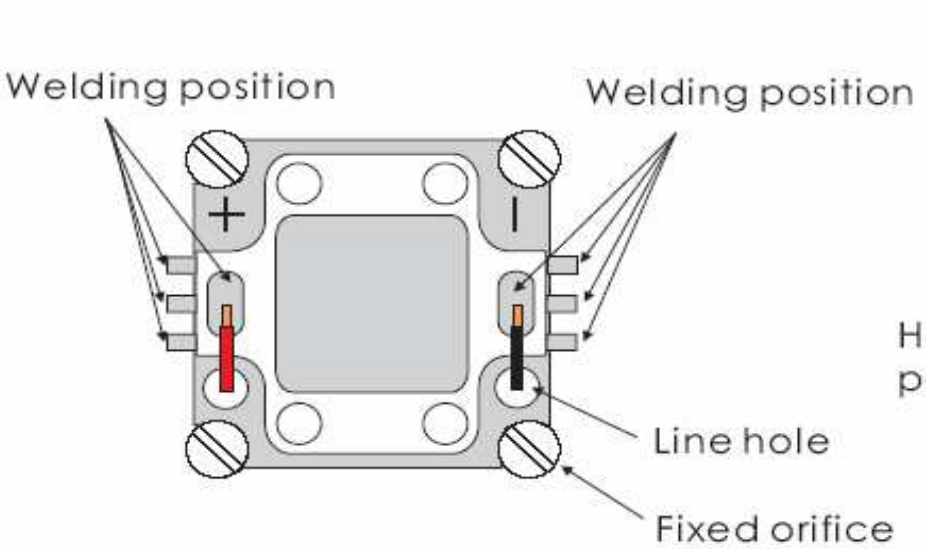
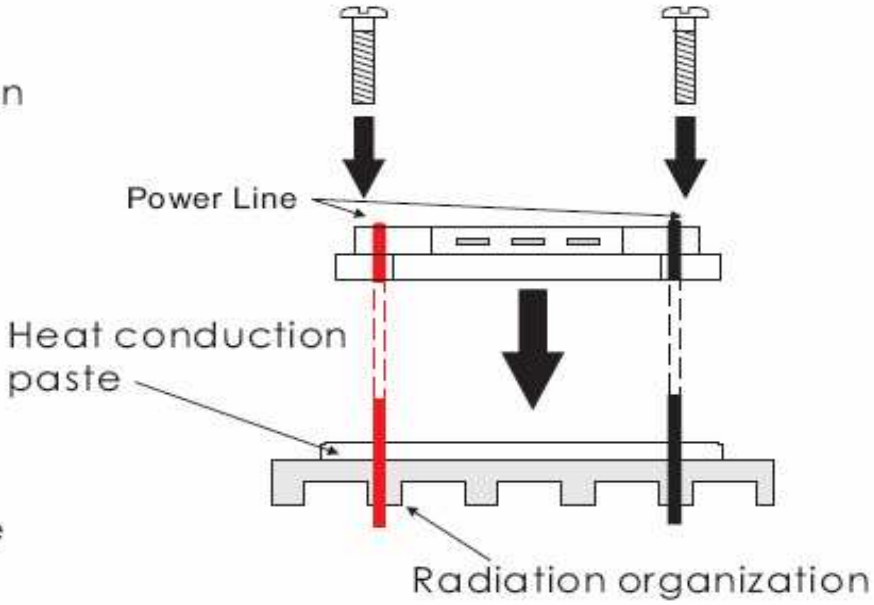
Mounting Explanation





EDCON-COMPONENTS provide simples comparsion table for High Power LED, you could find your request heat dissipation area from the following table.

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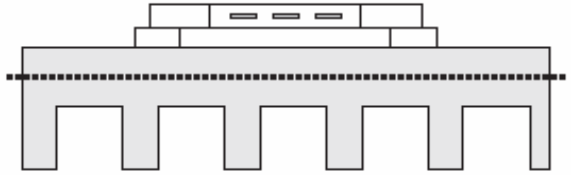
Conclusion



Free Convection Horizontal	
Flat Heat Dissipation Set-up	
(Area Require mm²)	
Green	29,500
Yellow	15,500
Red	9,500
Blue	23,000

Free Convection Vertical	
Flat Heat Dissipation Set-up	
(Area Require mm²)	
Green	22,000
Yellow	11,500
Red	7,000
Blue	17,500

Free Convection	
Finned Heat dissipation Set-up	
(Area Require mm²)	
Green	103,000
Yellow	53,000
Red	33,000
Blue	80,500

TAB in this table is according to highest operating temperature 65℃

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

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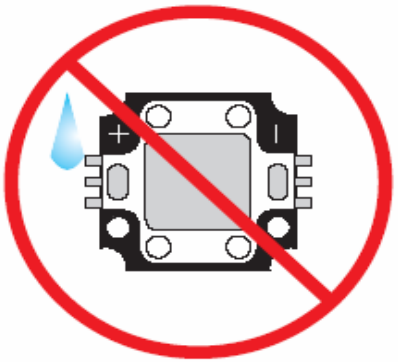
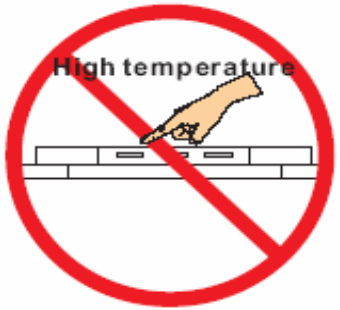
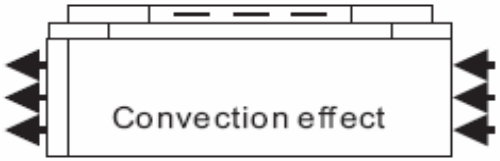
Operating Instructions



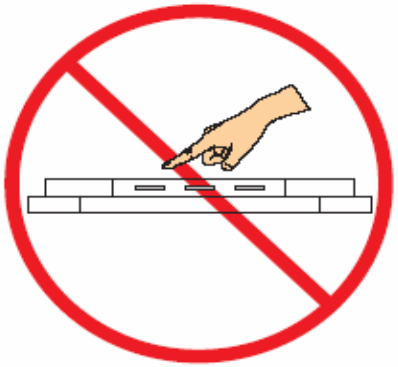
It is important to keep away thre product from the water, in order to avoid the product electronic characteristics to be harmful



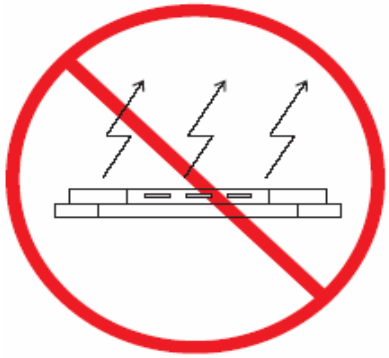
There is 150℃ directly from the front of Power LED emitting diode. It is untouchable to prevent burning.



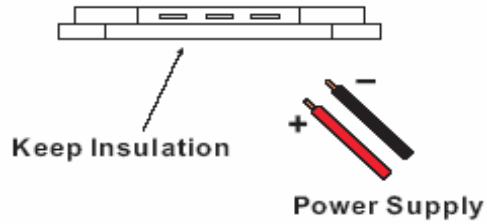
It is should be noticed whether there is convection in design of device. Convection has to exist.



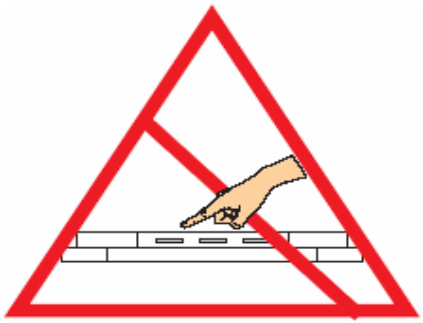
The material in the central top of POWER LED is soft. Therefore, it is unsqueenzable and untouchable.



The product should not be light up directly without heat dissipation device



In the button of heat sink cannot be touched with neither positve nor negative pole. (Heat sink has to be insulation)



When making use of products, it is necessary to use anti ESD devices to prevent destructive electronic characteristics.

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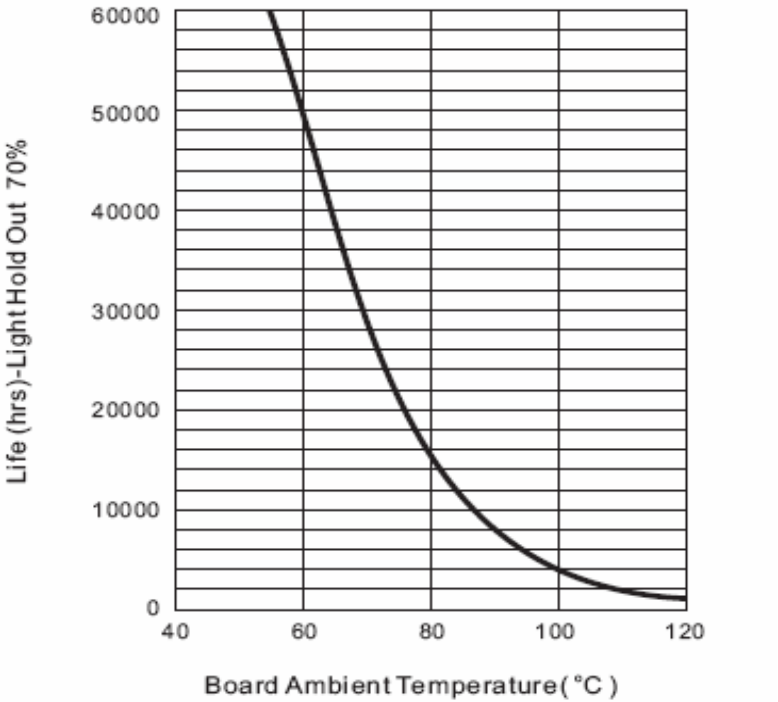
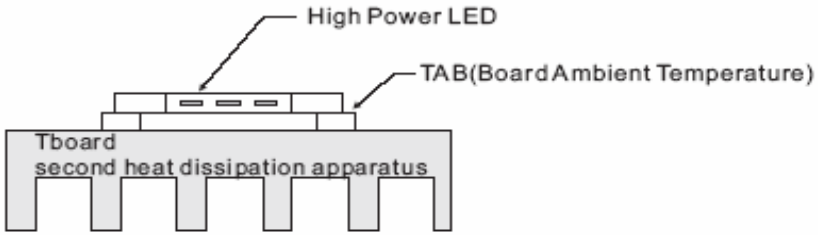
TAB Temperature LIFE Characteristics Curve





Board Ambient Temperature Tolerance 5℃
TAB in this table is according to highest operating temperature 65℃
The TAB is the stable testing value for the product lighted 100% after one hour
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Ordering Informations

Serie		Emitting Color	Wavelength (nm) or (°K)	Brightness	ROHS	Packing Code					
M15016	**-**	**BL**	**0462**	**0560**	**R**	**BU**					

BL= Blue	**0462=** 462mn	**0560**= 560lm	**R=** ROHS Conform	**BU=** Bulk Ware	
			N= NON ROHS Conform	**TY=** Tray Packing	

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