



## Features

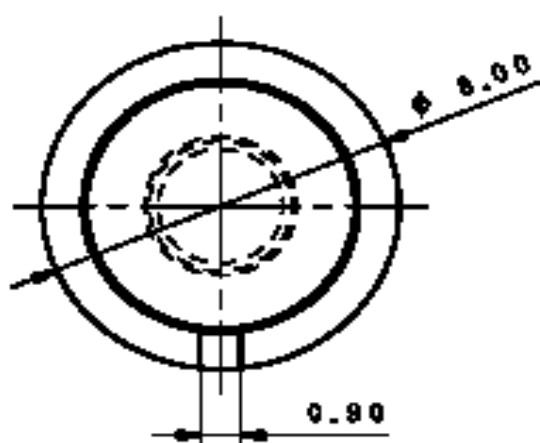
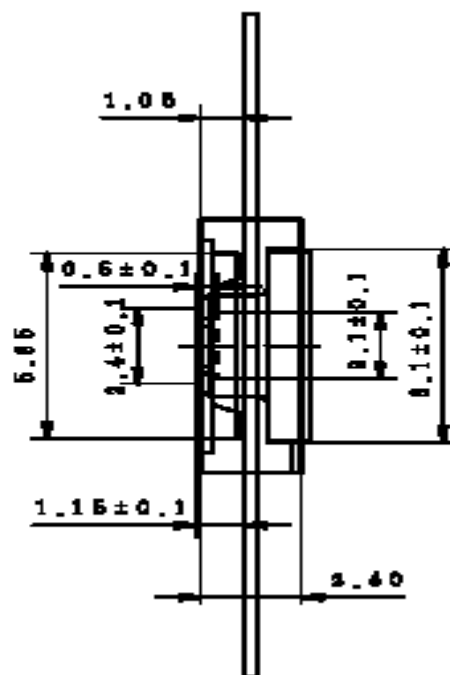
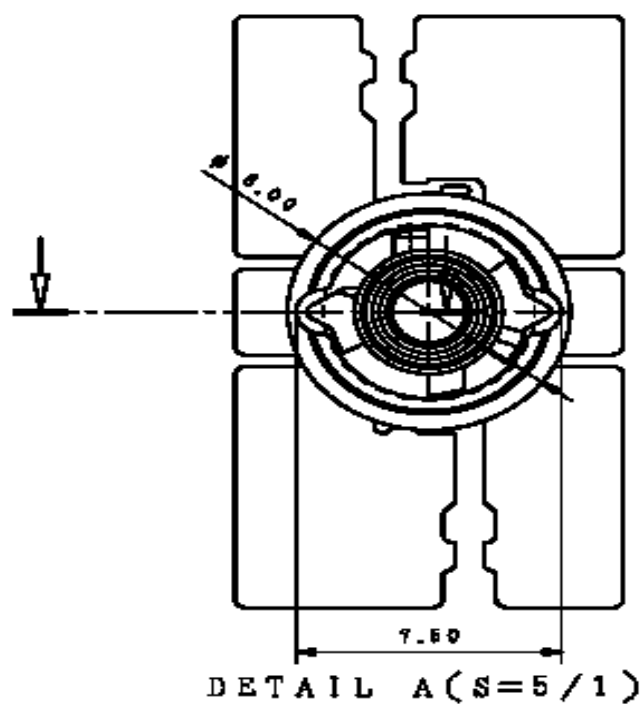
- more energy Efficient than incandescent and most halogen lamps
- available in white, green ,blue ,red, red-orange and amber
- Very long operating life(up to 100k hours)
- Cool beam ,safe to the touch
- No UV
- low voltage DC operated
- Instant light (less than 100ns)
- Superior ESD protection
- Thin shape than other power LED package

## Application

- traffic signal
- automotive
- architectural lighting
- camera flash light
- decorative lighting
- LCD backlight



## mechanical dimensions



### Notes:

- 1、all dimensions are in millimeters(inches).
- 2、Tolerance is  $\pm 0.2\text{mm}$ (.008") unless otherwise noted.



Flux characteristics at 200mA, Junction Temperature Ts=25℃

Color	P/N	Typical luminous Flux(lm)	Viewing Angle(degrees) 2 θ 1/2	Dominate Wavelength or color temperature (typ.)
White	LS-P0.5W11	28	100	5000K

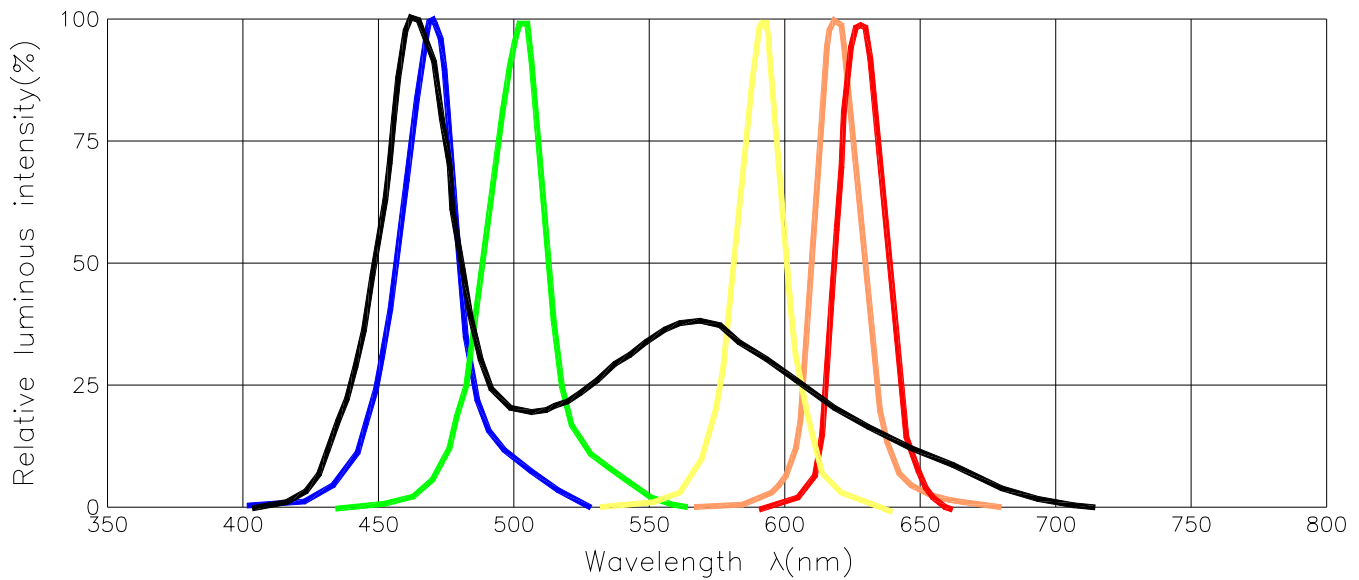
Absolute Maximum Ratings at Ta=25℃

parameter	white	Unit
Power dissipation	600	mW
Peak pulse forward current	350	mA
DC forward current	200	mA
LED junction temperature	120	
ESD classification(HBM per MIL-STD-883D)	Class2	
Operating temperature range	-40℃ to +80℃	
Storage Temperature range	40℃ to +120℃	



## Relative spectral power distribution

Spectrum Distribution



## Relative Intensity VS. Temperature

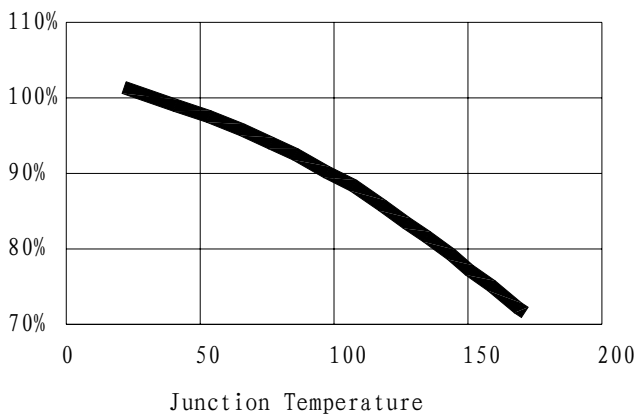


Figure 1A.  
Blue, Green and White

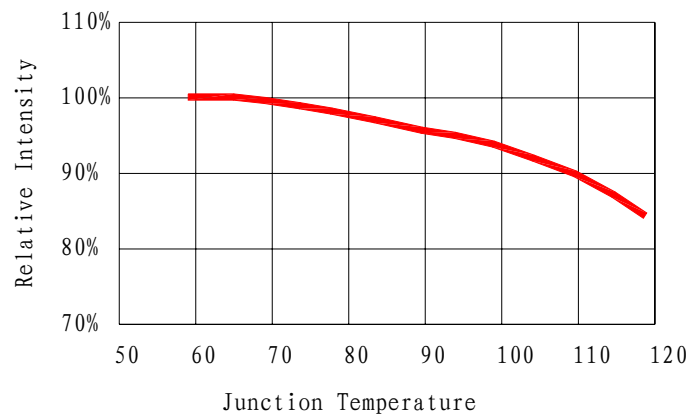
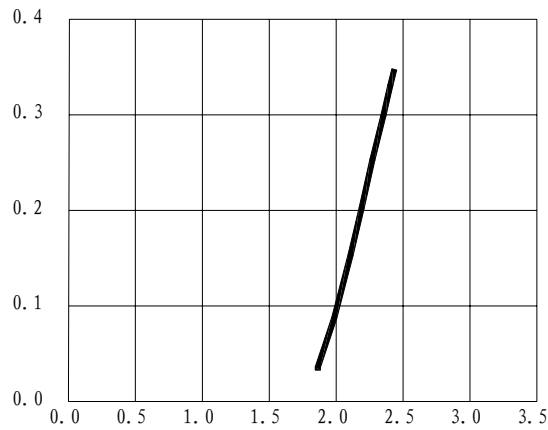


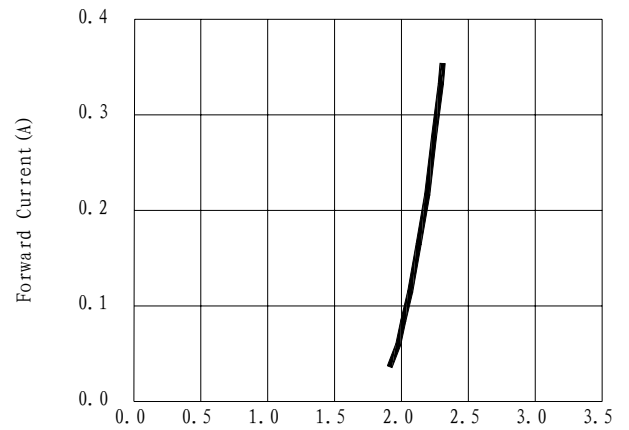
Figure 2A.  
Red, Red-Orange and Amber

## Typical Electrical/Optical Characteristics Curves (25°C Junction Temperature Unless Otherwise Noted)



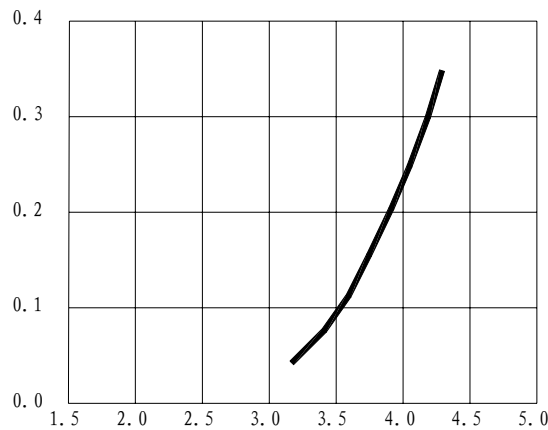
Forward Voltage (Volts)

Figure 2A.  
Forward Current vs. Forward  
Voltage for LS-P1R4 and  
LS-P1R04



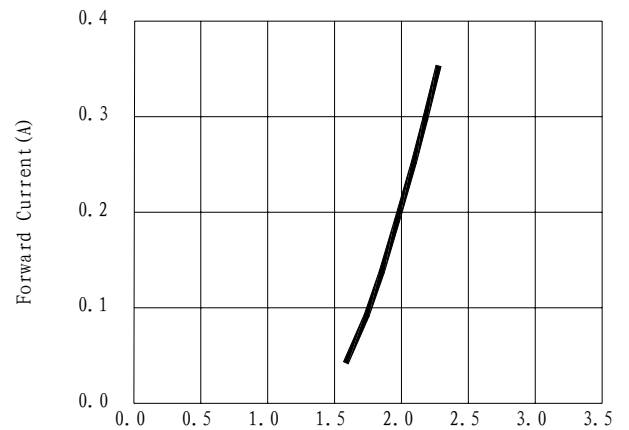
Forward Voltage (Volts)

Figure 2A.  
Forward Current vs. Forward  
Voltage for LS-P104



Forward Voltage (Volts)

Figure 2A.  
Forward Current vs. Forward  
Voltage for LS-P1G4



Forward Voltage (Volts)

Figure 2A.  
Forward Current vs. Forward  
Voltage for LS-P1B4 and  
LS-P1W1

Typical Electrical/Optical Characteristics Curves  
(25°C Junction Temperature Unless Otherwise Noted)

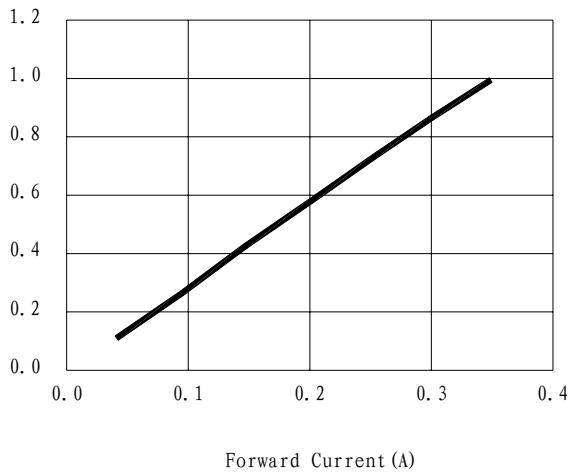


Figure 3A.  
Relative Luminous Flux vs. Forward  
current for Red, Red-Orange and Amber

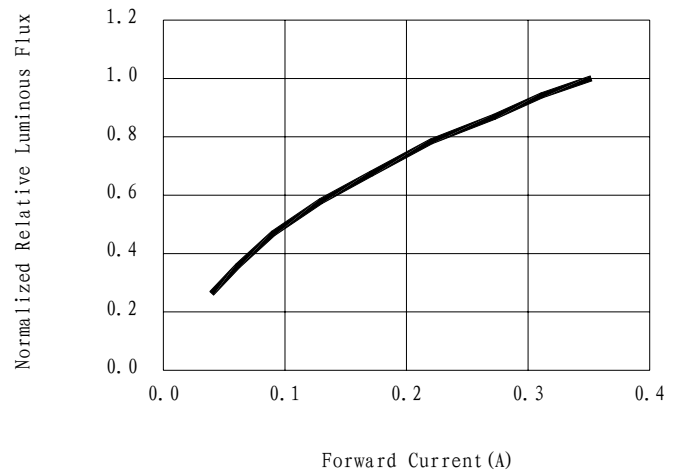


Figure 3B.  
Relative Luminous Flux vs. Forward  
current for Green

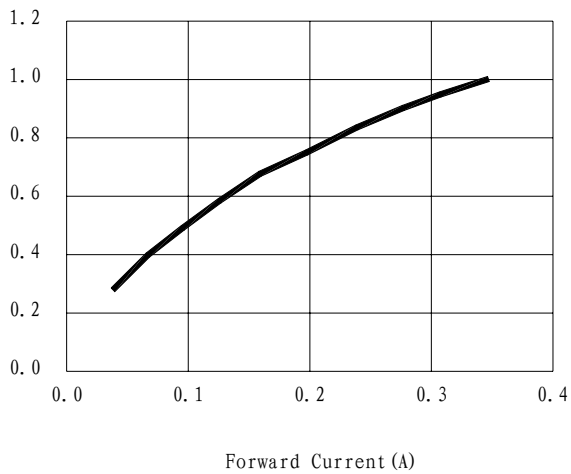
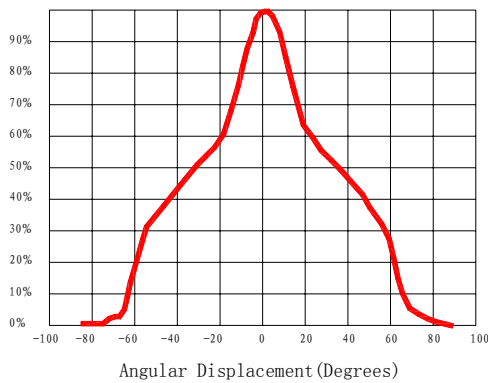
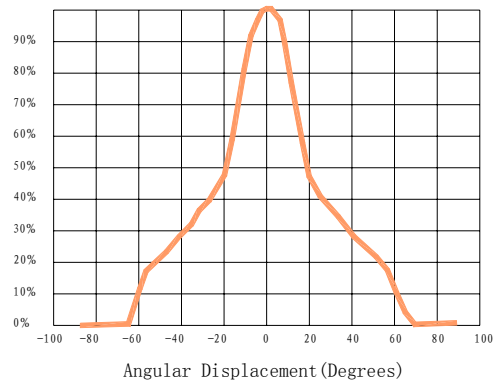


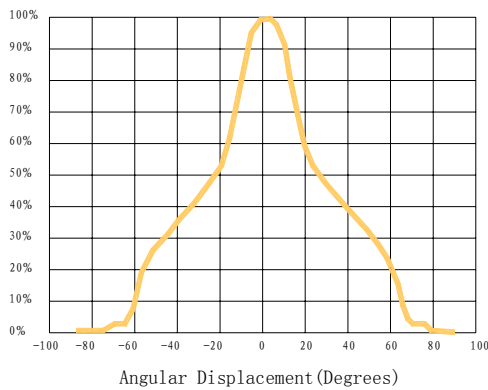
Figure 3A.  
Relative Luminous Flux vs. Forward  
current for Blue and White



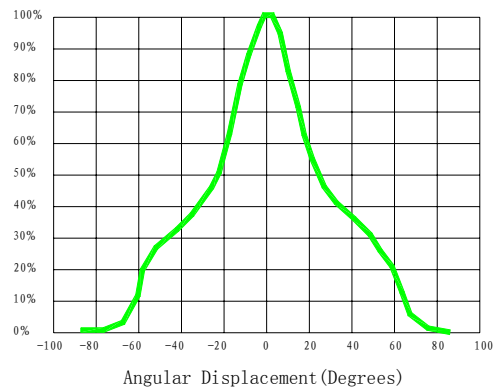
Angular Displacement (Degrees)  
Figure 4A.  
Typical Representative Spatial Radiation  
Pattern for LS-P1R04



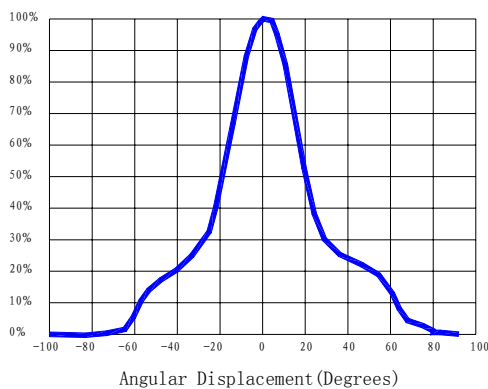
Angular Displacement (Degrees)  
Figure 4B.  
Typical Representative Spatial Radiation  
Pattern for LS-P1R004



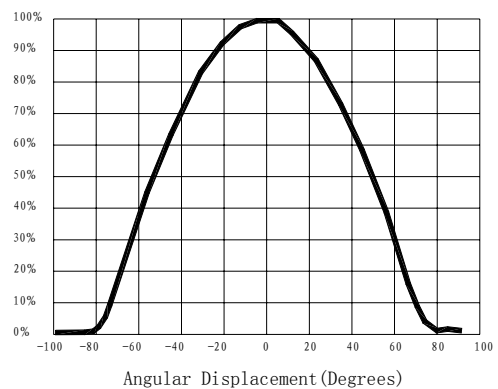
Angular Displacement (Degrees)  
Figure 4D.  
Typical Representative Spatial Radiation  
Pattern for LS-P1A01



Angular Displacement (Degrees)  
Figure 4E.  
Typical Representative Spatial Radiation  
Pattern for LS-P1G04



Angular Displacement (Degrees)  
Figure 4E.  
Typical Representative Spatial Radiation  
Pattern for LS-P1B04



Angular Displacement (Degrees)  
Figure 4F.  
Typical Representative Spatial Radiation  
Pattern for LS-P1W01



Reliability Test Item List for Conqueror Package			
Test Item Criteria	Test condition	Test Duration	Failure
Room Temperature Operation Life (RTOL)	25°C or 55°C, IF=max (Note 1)	1000 hours	Note 2
High Temperature Operation Life (HTOL)	55°C or 85°C, IF=max DC (Note 1)	1000 hours	Note 2
Low Temperature Operation Life (LTOL)	-40°C, IF=max DC	1000 hours	Note 2
Powered Temperature Life Cycle (PTLC)	-40°C to 85°C, 18mins dwell time, 42mins transfer time (2 hour cycle), 5mins ON/OFF, IF=max DC	200 cycles	Note 2
High Temperature Storage Life (HTOL)	110°C	1000 hours	Note 2
Low Temperature Storage Life (LTOL)	-40°C	1000 hours	Note 2
Thermal shock (TS)	-40°C to 120°C, 20mins dwell Time/20secs transfer time	200 cycles	No catastrophic
Solder Heat Resistance (SHR)	260°C $\pm$ 5°C, 10secs		No catastrophic
Solderability	Steam age for 16 hrs, then Solder dip at 245°C for 5 secs		Solder coverage on lead
Salt Atmosphere	35°C	48 hours	No catastrophic
Mechanical Shock	1500G, 0.5msec pulse, 5 Shocks each 6 axis		No catastrophic
Natural Drop	On concrete from 1.2m, 3times		No catastrophic
Random Vibration	6G RMS from 10 to 2KHZ		No catastrophic
	10mins/axis		
Lead Strength	1 Ib, 30 secs		No catastrophic
Lead Fatigue	1 Ib, 3 $\times$ 45° bend		No catastrophic
Variable Vibration Frequency-1	10-2000-10 HZ, log or linear Sweep rate, 20G about 1 min, 1.5mm, 3times/axis		No catastrophic
Variable Vibration Frequency-2	10-55-10 HZ, $\pm$ 0.75mm 55-2000, 10G, 1 octave/min, 3times/axis		No catastrophic
Note 1: Depending on the maximum derating curve.			
Note 2: Failure criteria includes units with catastrophic failures, or units with greater than 50% I <sub>v</sub> degradation at 1000hrs, or an average I <sub>v</sub> degradation for the test of greater than 35% at 1000hrs			