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3W Power Light LED

**LGSW-313E**

DATA SHEET

DOC. NO : QW0905-LGSW-313E#

DATE : 06 - Jun - 2007

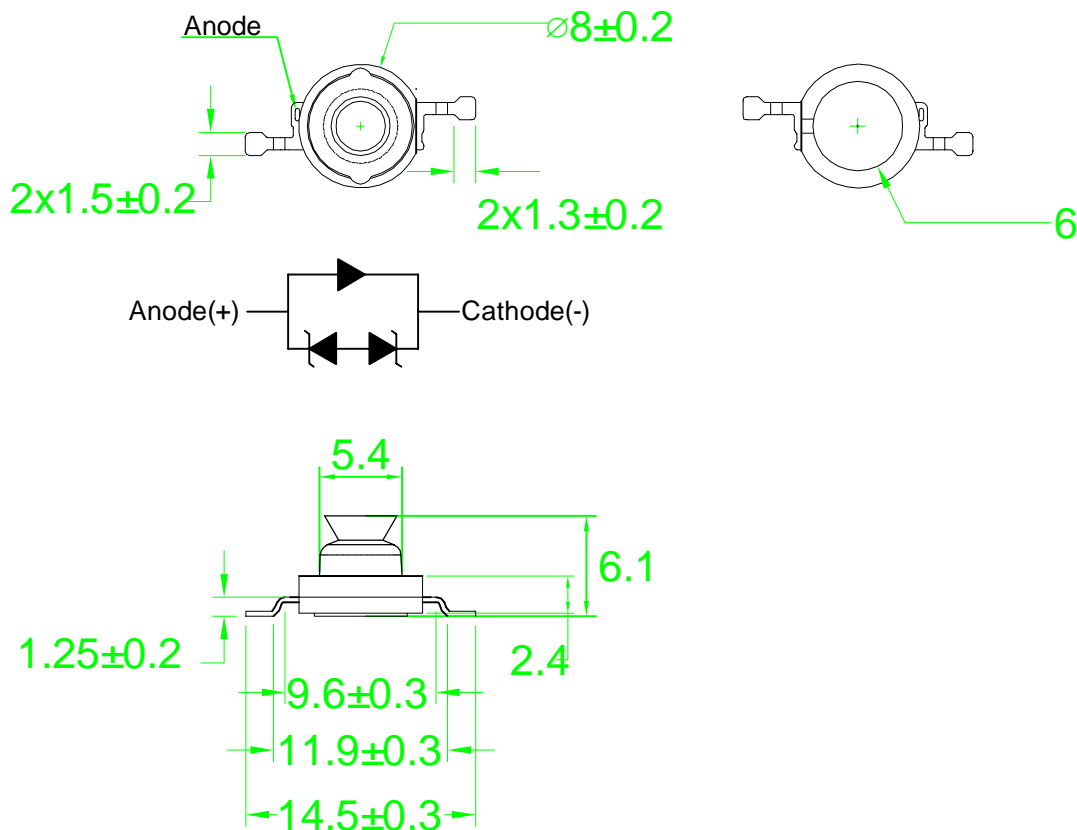
## Features

- \* High Flux per LED
- \* Very long operating life(up to 100k hours).
- \* Available in White.
- \* More Energy Efficient than Incandescent and most Halogen lamps.
- \* Low voltage DC operated..
- \* Cool beam, safe to the touch.
- \* Instant light(less than 100 ns).
- \* Fully dimmable.
- \* No UV.
- \* Superior ESD protection..
- \* Soldering methods: hand Soldering.

## Typical Applications

- \* Reading Light (car,bus,aircraft)
- \* Portable(flashlight,bicycle).
- \* LCD Backlights / Light Guides.
- \* Automotive Exterior (Stop-Tail-Tum,CHMSL,Mirror Side Repeat).
- \* Commercial and Residential Architectural lighting.
- \* Mini-accent / Uplighters / Downlighters / Orientation lighting
- \* Fiber Optic Alternative / Decorative / Entertainment lighting.
- \* Security / Garden lighting.
- \* Cove / Underself / Task lighting.
- \* Traffic signaling / Beacons / Rail crossing and Wayside lighting.
- \* Decorative.
- \* Sign and channel Letter.

## Dimension



Note:1.All dimension are in millimeter  
 2.Specifications are subject to change without notice

## Absolute Maximum Ratings at Ta=25

Parameter	Symbol	Ratings	UNIT
		White	
DC Forward Current	IF	700	mA
Power Dissipation	PD	2.8	W
Peak pulse current Duty 1/10@10KHz	IFP	1000	mA
LED junction Temperature	Tj	125	
Reverse Current(VR=5V)	Ir	100	μ A
Storage Temperature	Tstg	-40 ~ +120	
Operating Temperature	Topr	-40 ~ +100	
Manual Soldering Time at 260°C(Max)	Tsol	5	seconds

## . Luminous Flux Characteristics at 700mA (Ratings At 25 Ambient)

PART NO	Emission Color	Luminous Flux @700mA(Im)			Units
		Min.	Typ.	Max.	
LGSW-313E	White	67.2	100	----	Im

Note : White emitters are built with InGaN.



### . Forward Voltage Characteristics at 700mA

(Ratings At 25 Ambient)

PART NO	Emission Color	Vf			Units
		Min.	Typ.	Max.	
LGSW-313E	White	3.0	3.6	4.0	V

Note : Forward Voltage is measured with an accuracy of ±0.1V

### . Color Temperature Characteristics at 700mA

(Ratings At 25 Ambient )

PART NO	Emission Color	CCT			Units
		Min.	Typ.	Max.	
LGSW-313E	White	5500	----	10000	K

Note : CCT±5% tester tolerance.

### . Temperature Coefficient Of Forward Voltage&Thermal Resistance Junction To Board Characteristics at 700mA

(Ratings At 25 Ambient )

PART NO	Emission Color	$\Delta V_f / \Delta T$		Rth,j-B	
		Typ.	Units	Typ.	Units
LGSW-313E	White	-2	mV/°C	18	°C/W

### . Emission Angle Characteristics at 700mA

(Ratings At 25 Ambient )

PART NO	Emission Color	Side emitting PEAK(Typ.)	Units
LGSW-313E	White	±80	Degrees



### Brightness Code For High Power LED

Group	Luminous flux(lm)	
	Min	Max
F24	67.2	87.4
F25	87.4	113.6
F26	113.6	147.7

Note : Flux is measured with an accuracy of  $\pm 10\%$

### Color Temperature For High Power LED

Group		CCT
C1	C1-1	5500-6000
	C1-2	6000-6500
	C1-3	6500-7000
C2	C2-1	7000-7500
	C2-2	7500-8000
	C2-3	8000-8500
C3	C3-1	8500-9000
	C3-2	9000-9500
	C3-3	9500-10000



Fig.1 Forward current vs. Forward Voltage

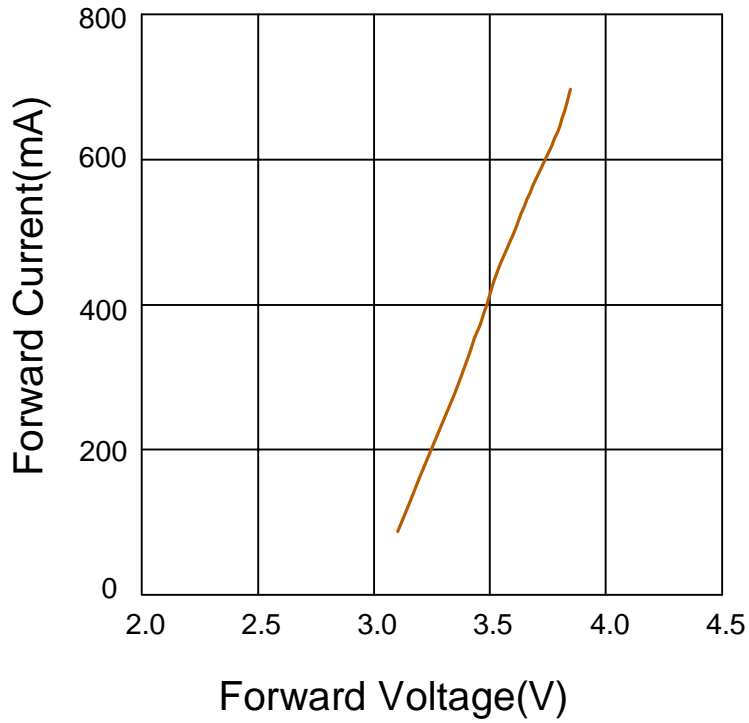


Fig.2 Operating current vs. Ambient Temperature

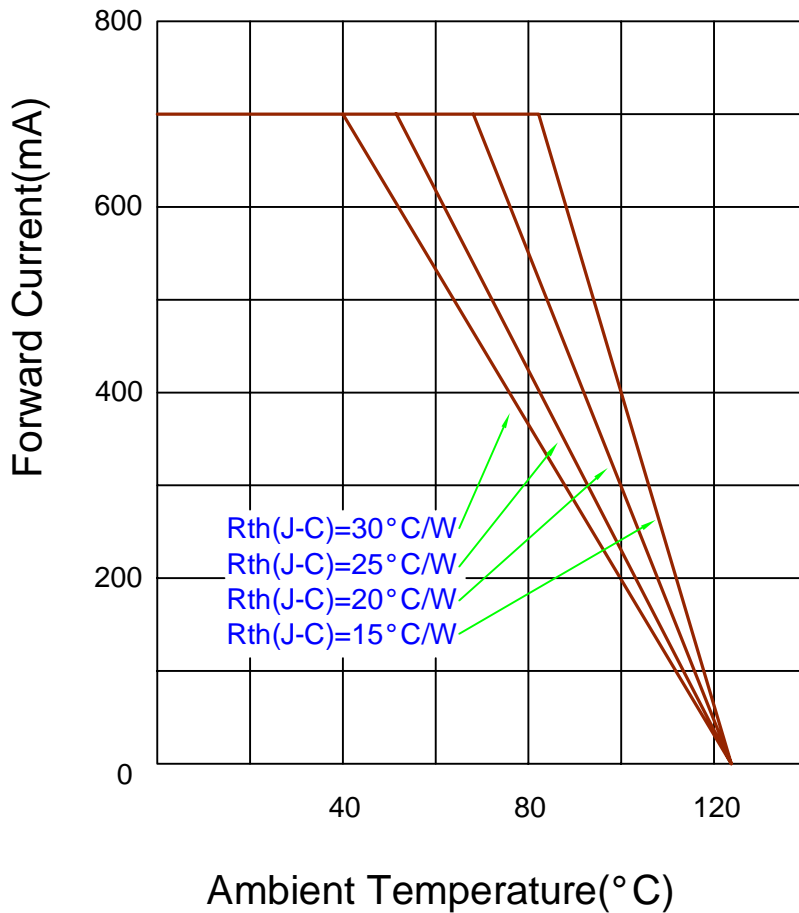




Fig.3 Forward current vs. Luminous Flux

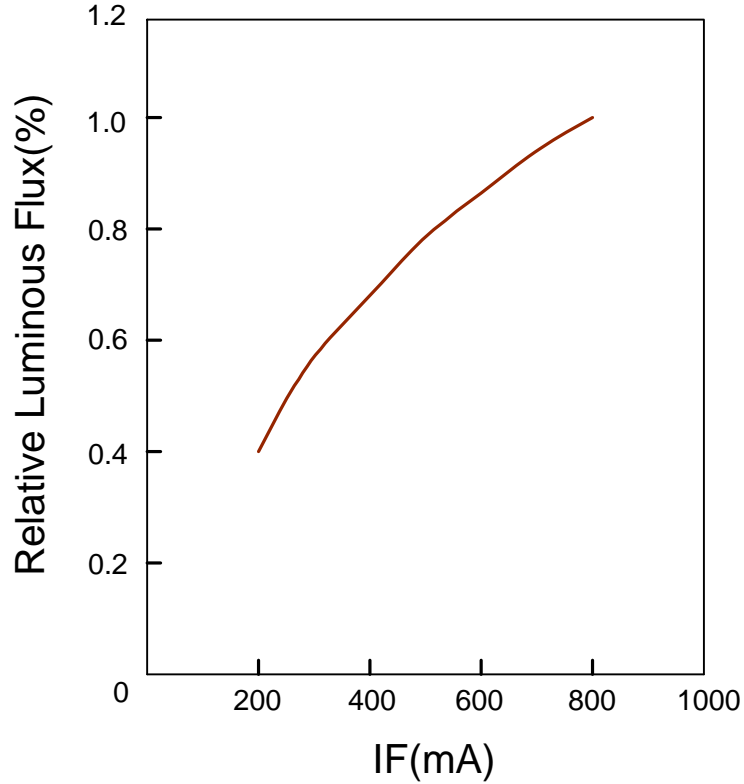


Fig.4 Junction Temperature vs. Forward Voltage

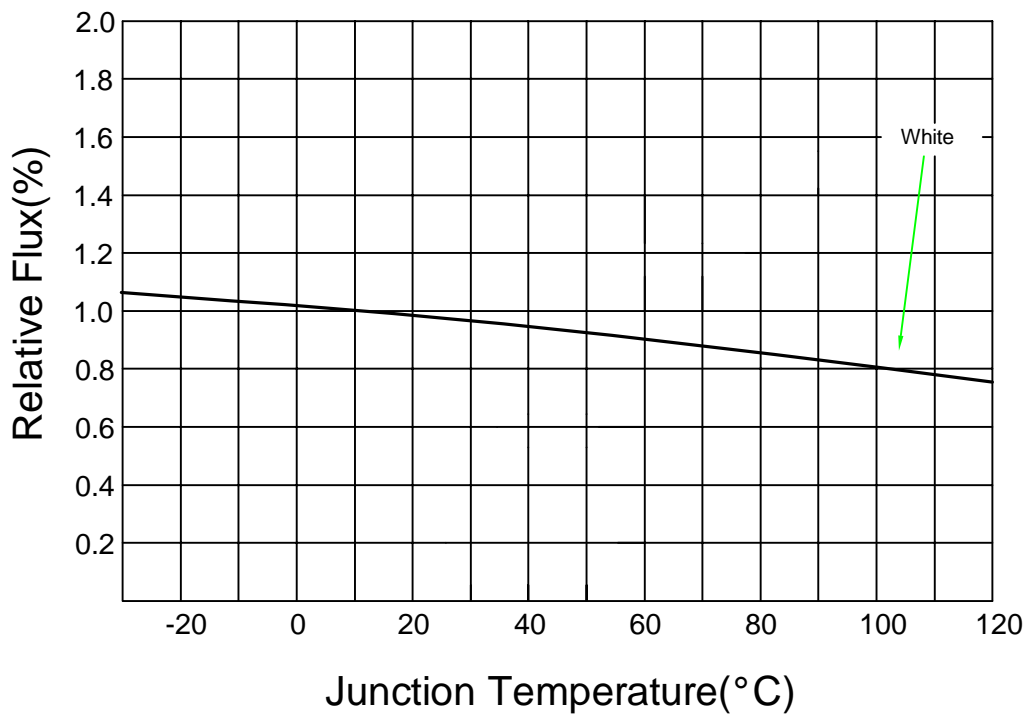




Fig.5 Luminous Spectrum(Ta=25 )

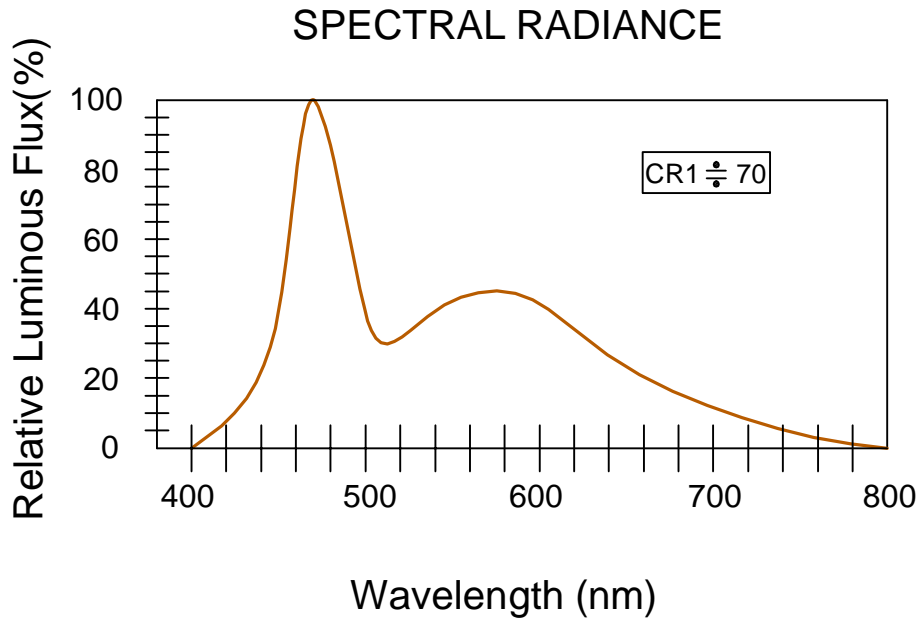
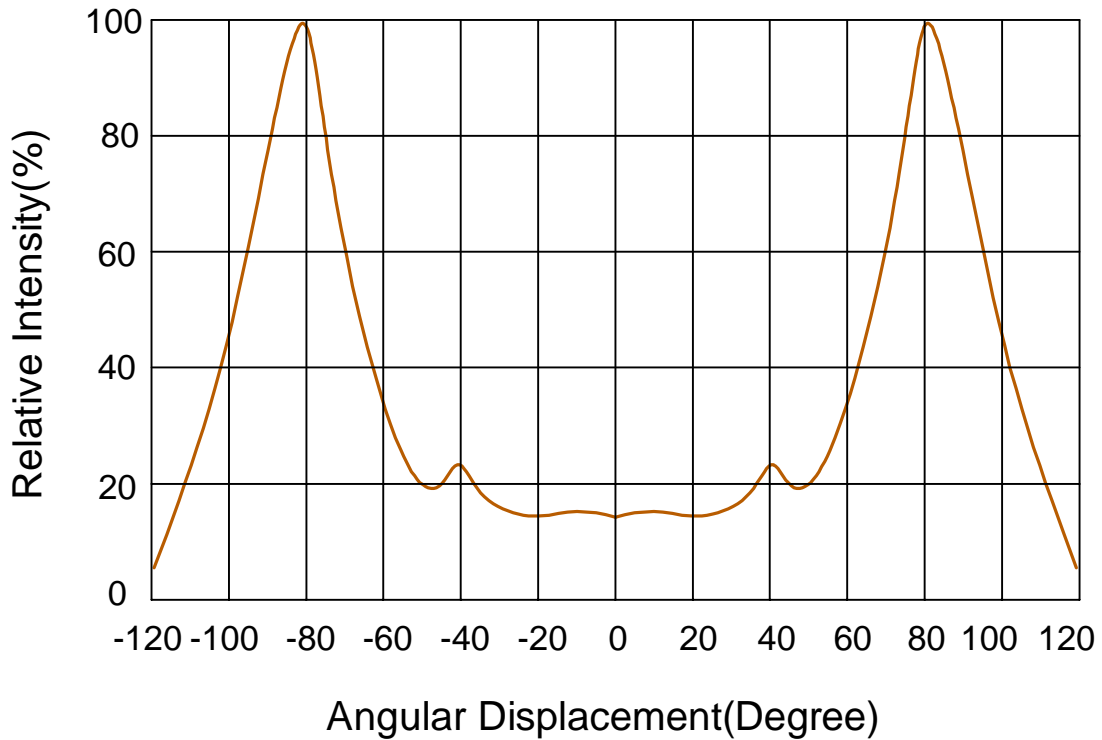


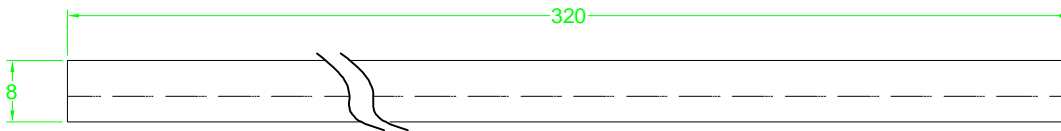
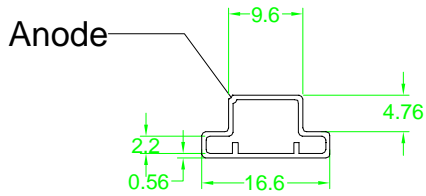
Fig.6 Directivity Radiation







## Package Specificatious



1. All dimensions are in mm.
2. There are 35 pcs emitters in a tube.
3. There are 90 tubes in a inner box.



## Reliability Test

Item	Description	Stress Condition	Test Duration
RTOL	Room Temperature Operation Life	25° C, Max. If	1000 hours
WHT	Wet High Temperature	85° C/85%RH	1000 hours
TC	Temperature Cycling	-40/+110° C, 30min dwell,<5min trans.	200 cycles
TS	Thermal Shock	-40/+110° C, 20min dwell,<20min trans.	200 cycles
HTSL	High Temperature Storage Life	120° C	1000 hours
LTOL	Low Temperature Storage Life	-40° C	1000 hours
SHR	Solder Heat Resistance	260±5° C, 5secs	
MS	Mechanical Shock	1500G,0.5msec pulse, 5 shocks each 6 axis	
ND	Natural Drop	On concrete from 1.2m, 3times	
RV	Random Vibration	6G RMS from 10 to 2KHz, 10mins/axis	
VVF	Variable Vibration Frequency	10-2000-10Hz, 20G 1 min, 1.5mm, 3timesx/axis	

Note :

Failure criteria:

Electrical failures

V<sub>F</sub> shife >= 10%

I<sub>R</sub> < 50uA@V<sub>r</sub> = 5v

Ligitek output Degradation

%I<sub>v</sub> shift >= 30%@1000hrs or 200cycle

Visual failures

Broken or damaged pockage or lead

Dimension out of tolerance