



LIGITEK

LIGITEK ELECTRONICS CO.,LTD.
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3W Power Light LED

LGSV-313H

DATA SHEET

DOC. NO : QW0905-LGSV-313H#

DATE : 06 - Jun - 2007



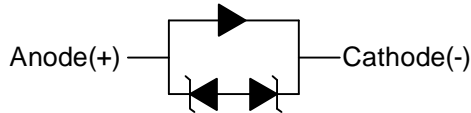
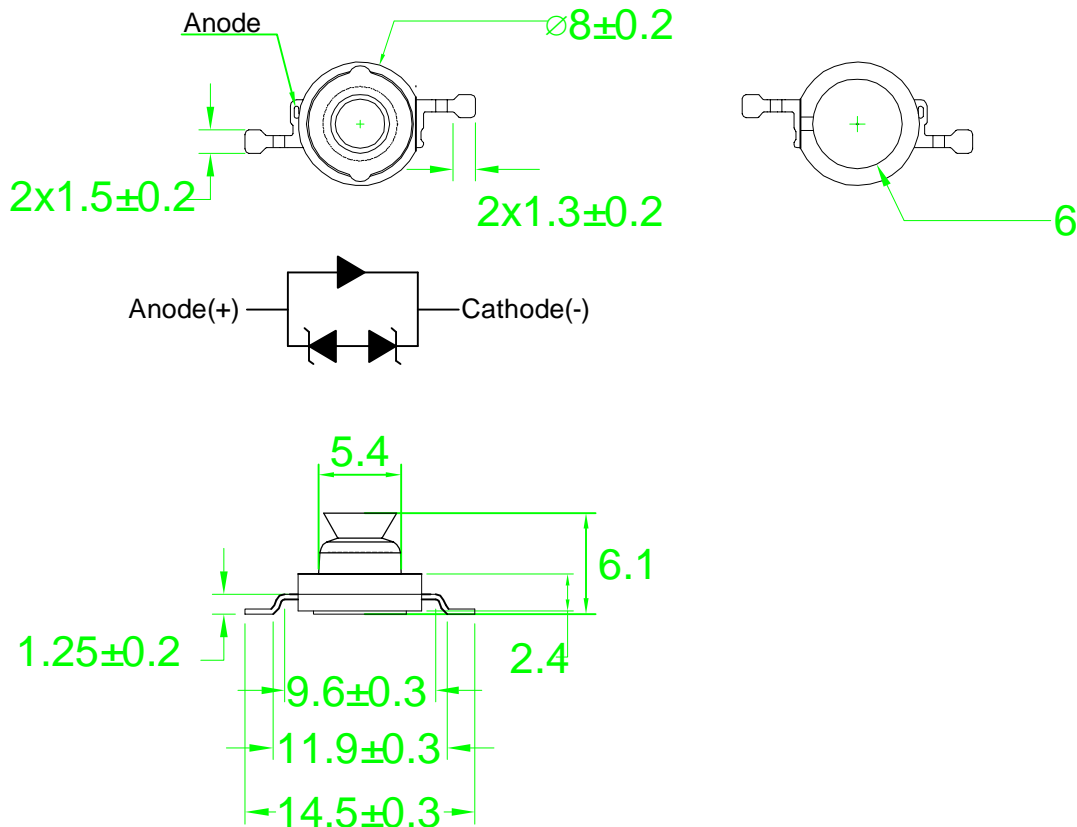
Features

- * 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

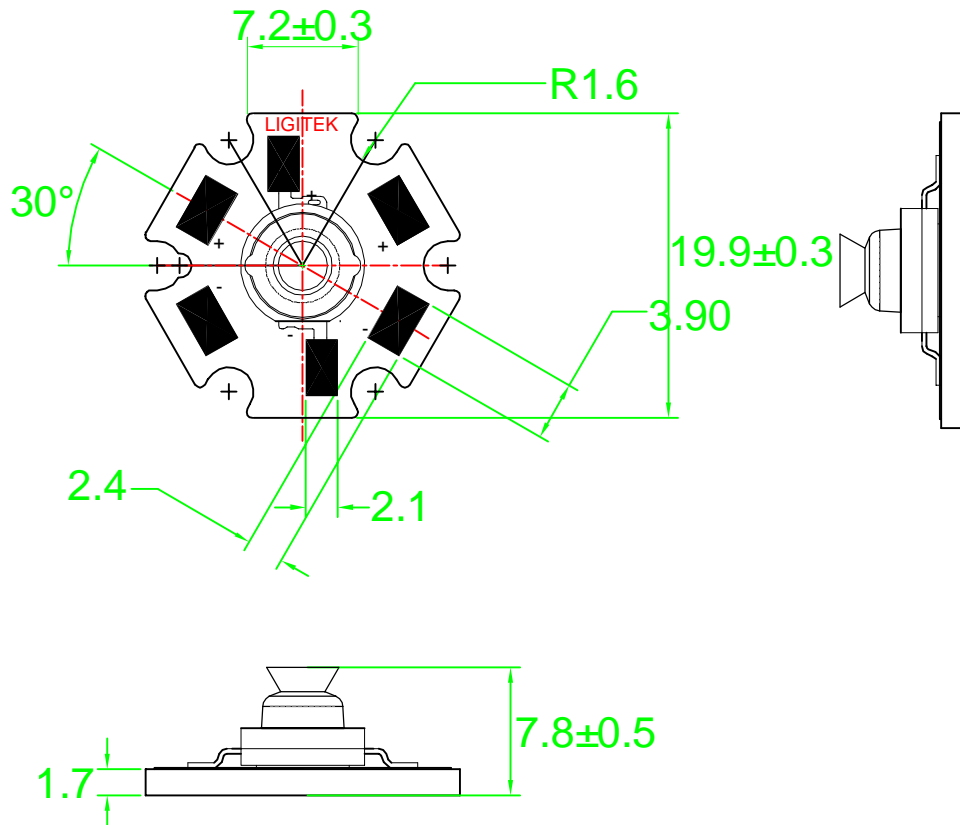
- * Reading Light (car,bus,aircraft)
- * Portable(flashlight,bicycle).
- * LCD Backlights / Light Guides.
- * Automotive Exterior (Stop-Tail-Tum,CHMSL,Mirror Side Repeat).
- * Commercial and Residential Architectural lighting.
- * Mini-accent / Uplighters / Downlighters / Orientation lighting
- * Fiber Optic Alternative / Decorative / Entertainment lighting.
- * Security / Garden lighting.
- * Cove / Undershef / 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

Mechanical Dimensions



Note:1.All dimension are in millimeter



Absolute Maximum Ratings at Ta=25

Parameter	Symbol	Ratings	UNIT
		Warm White	
DC Forward Current	I _F	700	mA
Power Dissipation	PD	2.8	W
Peak pulse current Duty 1/10@10KHz	I _{FP}	1000	mA
LED junction Temperature	T _j	125	
Reverse Current(VR=5V)	I _r	100	μA
Storage Temperature	T _{stg}	-40 ~ +120	
Operating Temperature	T _{opr}	-40 ~ +100	
Manual Soldering Time at 260°C(Max)	T _{sol}	5	seconds

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

PART NO	Emission Color	Luminous Flux @700mA(lm)			Units
		Min.	Typ.	Max.	
LGSV-313H	Warm White	51.2	85	----	lm

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.	
LGSV-313H	Warm White	3.0	3.6	4.0	V

Note : Forward Voltage is measured with an accuracy of $\pm 0.1V$

. Color Temperature Characteristics at 700mA

(Ratings At 25 Ambient)

PART NO	Emission Color	CCT			Units
		Min.	Typ.	Max.	
LGSV-313H	Warm White	2800	----	3800	K

Note : CCT $\pm 5\%$ 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
LGSV-313H	Warm 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
LGSV-313H	Warm White	± 80	Degrees



Brightness Code For High Power LED

Group	Luminous flux(lm)	
	Min	Max
F22	39.8	51.7
F23	51.7	67.2
F24	67.2	87.4
F25	87.4	113.6

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



Fig.1 Forward current vs. Forward Voltage

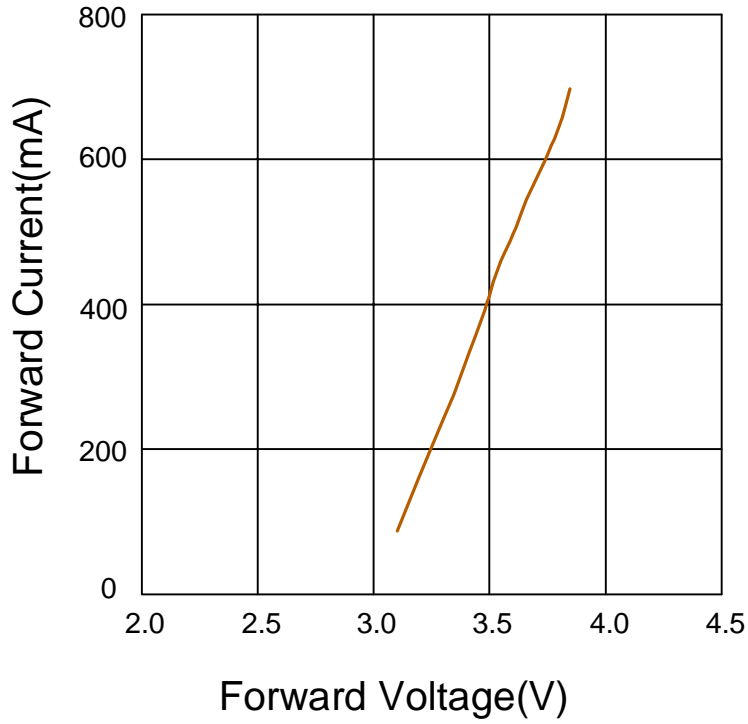


Fig.2 Operating current vs. Ambient Temperature

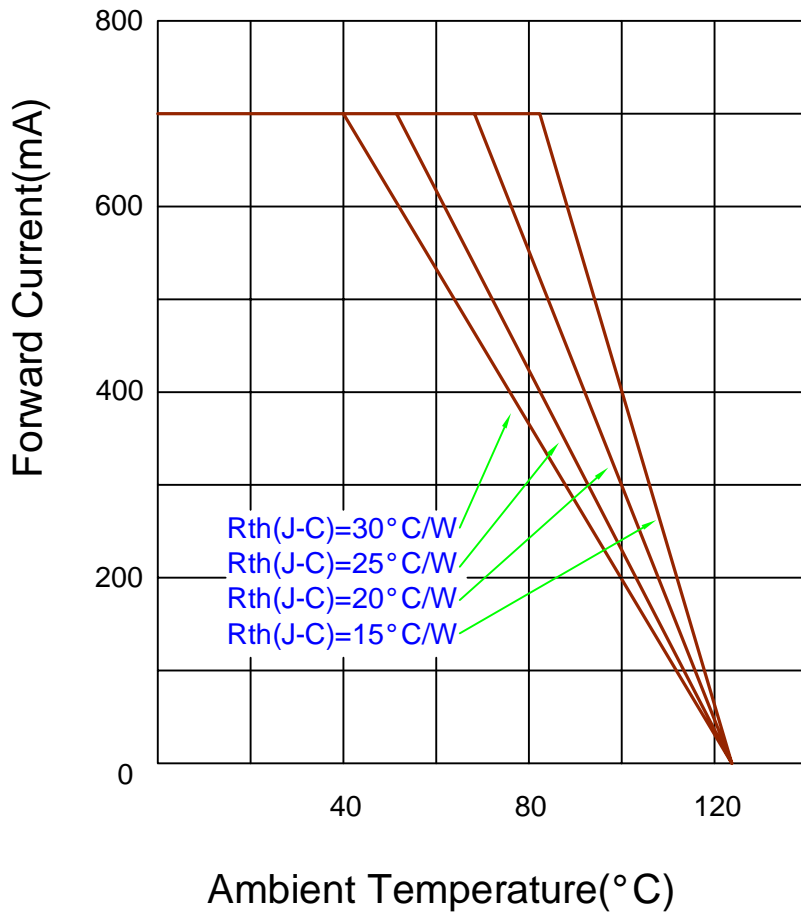




Fig.3 Forward current vs. Luminous Flux

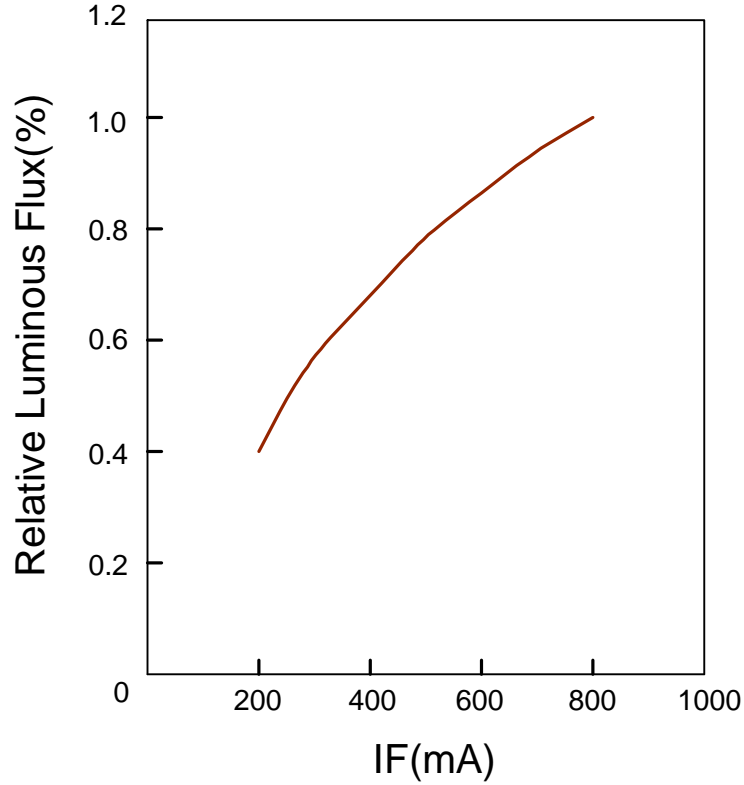


Fig.4 Junction Temperature vs. Forward Voltage

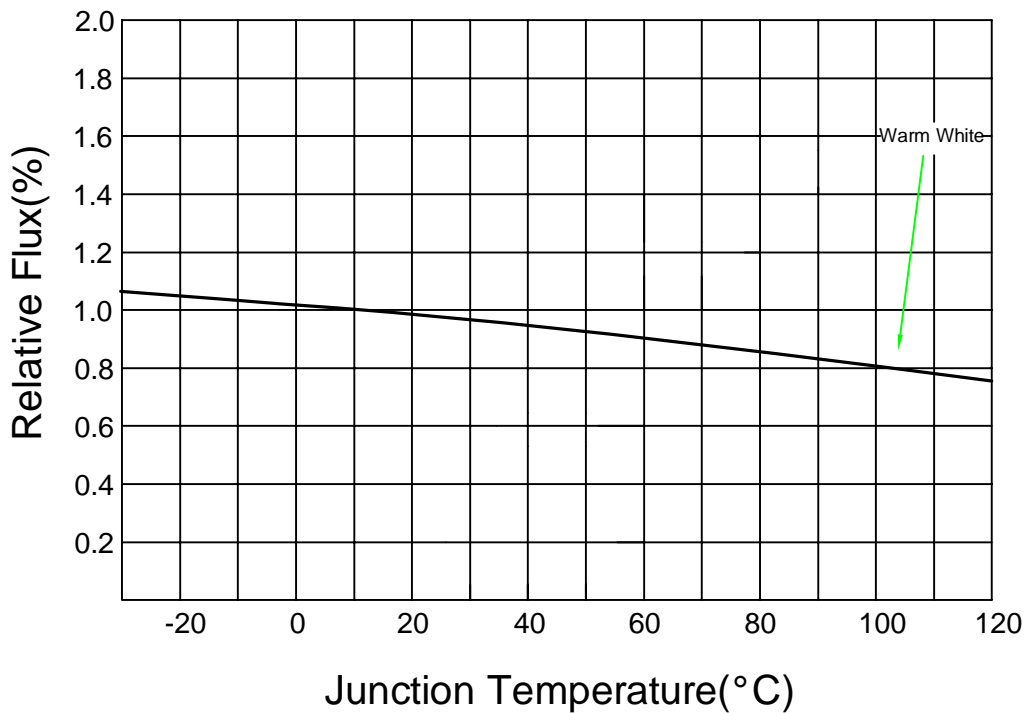


Fig.5 Luminous Spectrum(Ta=25)

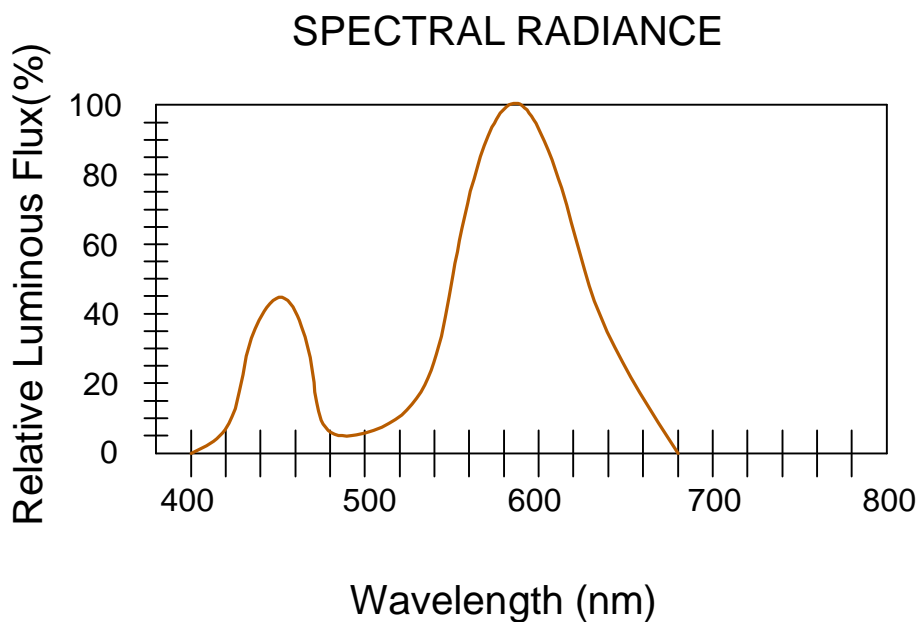
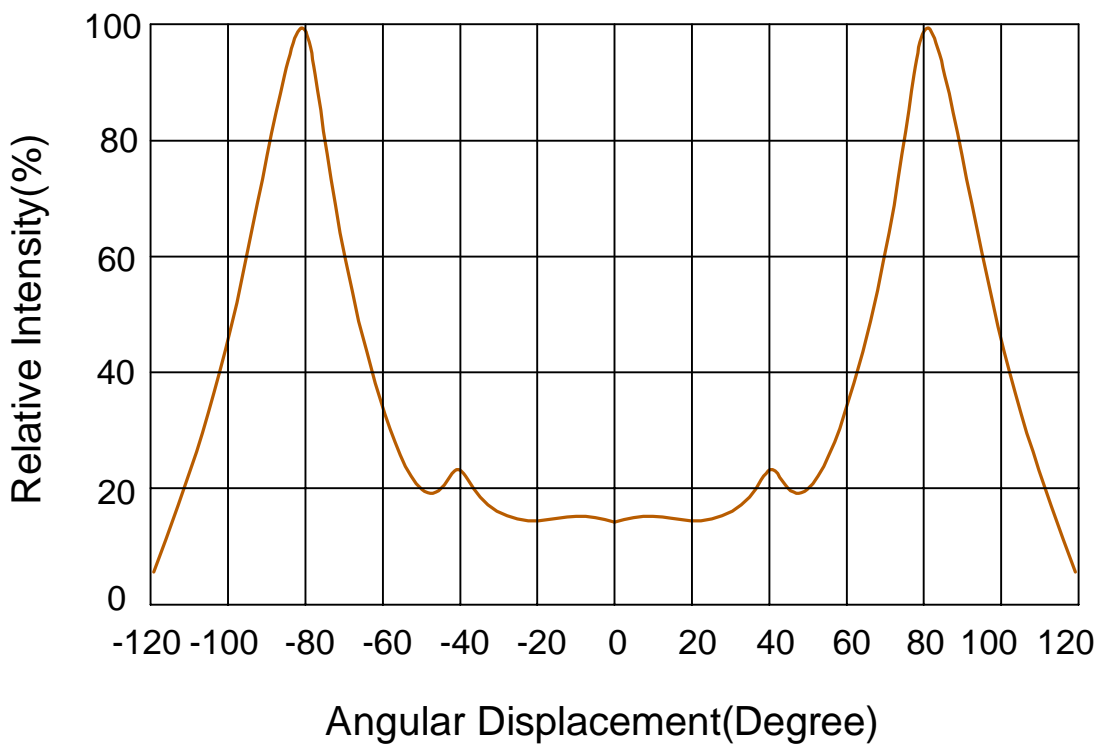
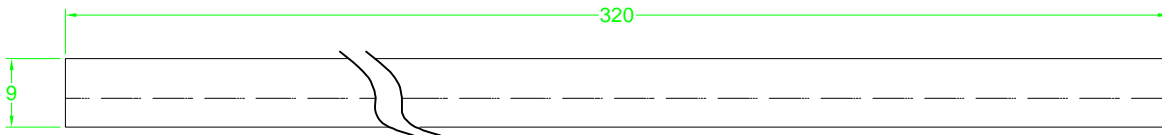
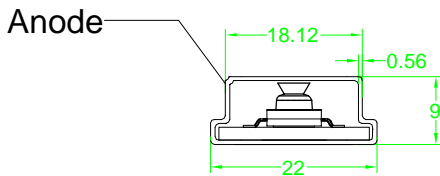


Fig.6 Directivity Radiation





Package Specifications



1. All dimensions are in mm.
2. There are 20 pcs emitters in a tube.
3. There are 64 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_F shife $\geq 10\%$

$I_R < 50\mu A @ V_r = 5v$

Ligitek output Degradation

$\%I_v$ shift $\geq 30\% @ 1000hrs$ or 200cycle

Visual failures

Broken or damaged pockage or lead

Dimension out of tolerance