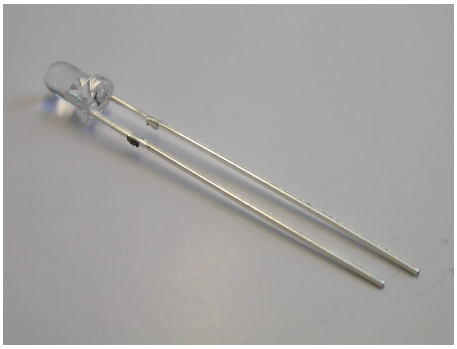
Powerlux Technology Co., Ltd.



Powerlux PLL-304W
3mm LED Lamp
Technical Datasheet
Version: 1.0

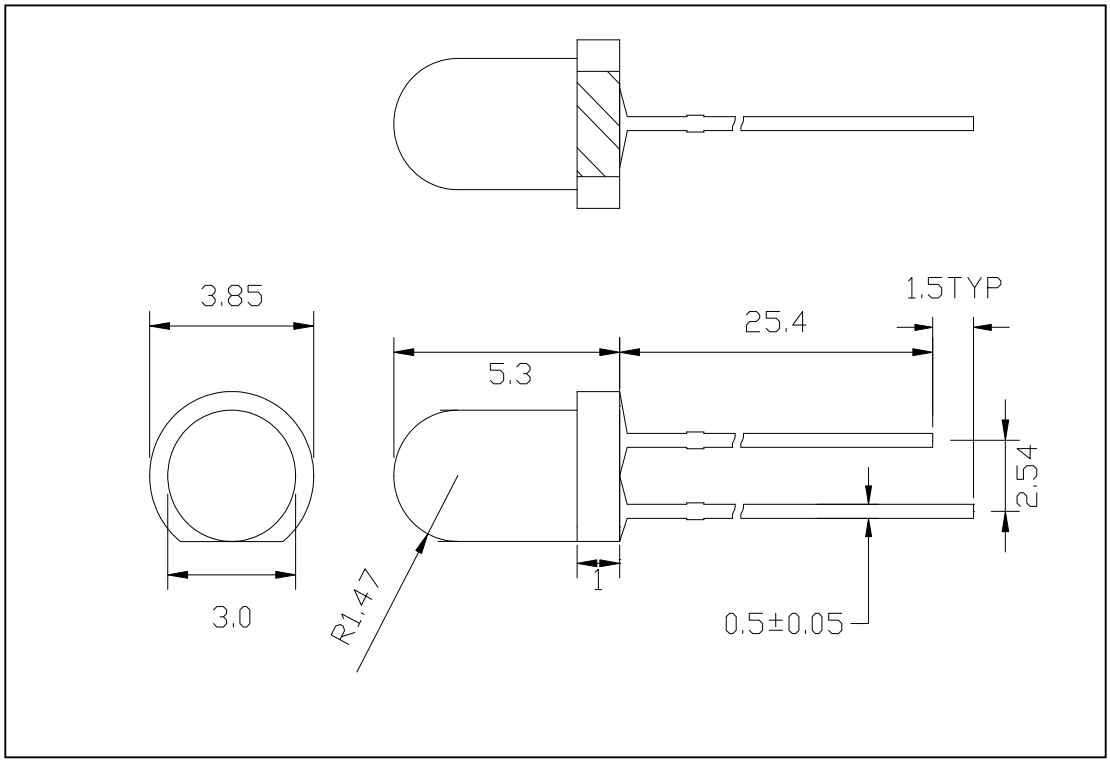
Features

- Available on tape and reel.
- Available in White, Warm White, Green, Blue, Amber, Red
- Reliable and robust
- ROHS compliant
- Available in different angle

Typical Applications

- Electronic signs and signals
- Portable (flashlight, bicycle)
- Specialty lighting
- Small area illumination
- Backlighting
- Outdoor displays

Mechanical Dimensions



Notes:

1. All dimensions are in millimeters.
2 .All dimendions without tolerances are for reference only.

Absolute Maximum Ratings (Ta = 25ºC)

Item	Symbol	Value	Unit
DC Forward Current	IF	20	mA
Forward Peak Pulse Current	IFP [1]	100	mA
Reverse Voltage	VR	5	V
Power Dissipation	PD	114	mW
Operating Temperature	Topr	-30 ~ 85	ºC
Storage Temperature	Tstg	-40 ~ 100	ºC
Solder Temperature	Ts	260ºC for 10seconds [2	ºC

Notes :

[1] t ≤ 0.1ms, D = 1/10

[2] No lower than 3mm from the base of the epoxy bulb.

Electro-Optical Characteristics (Ta = 25ºC, IF=20mA)

Item	Symbol	Value			
		Min.	Typ.	Max.	Unit
Luminous Intensity [3]	*IV* [4]	3000		5000	mcd
Luminous Flux	*ΦV*	-		-	lm
Chromaticity Coordinate [5]	*x, y*	x=0.31, y=0.31			-
Forward Voltage [6]	*VF*	-	3	3.6	V
View Angle	*2θ ½*	25			deg.
Thermal Resistance	*RθJ-A*	285			ºC /W
Optical Efficiency	*ηelc*	-		-	lm/W
Reverse Current (at *VR* = *5*V)	*IR*	-	-	30	uA

Notes :

[3] Powerlux maintains a tolerance of ±10% on intensity and power measurements.

[4] *IV* is the luminous intensity output as measured with a cylinder.

[5] Correlated Color Temperature is derived from the CIE 1931 Chromaticity diagram.

Color Coordinates Measurement allowance is ± 0.01

[6] A tolerance of ±0.05V on forward voltage measurements

Reliability Tests

Item	Condition	Note	Failures
Life Test	*Ta* = RT, *IF* = 30mA	1000hrs	0/22
High Temperature Operating	*Ta* = 85ºC, *IF* = 8mA	1000hrs	0/22
Low Temperature Operating	*Ta* = -30ºC, *IF* = 20mA	1000hrs	0/22
Thermal Shock	*Ta* = -40ºC (30min) ~ 100º (30min) (Transfer time : 10sec, 1Cycle = 1hr)	100 cycles	0/40
Resistance to soldering Heat	*Ts* = 255 ± 5ºC, *t* = 10sec	1 time	0/22
ESD (Human Body Model)	1kV, 1.5kΩ ; 100pF	1 time	0/22
High Temperature Storage	*Ta* = 100ºC	1000hrs	0/22
Low Temperature Storage	*Ta* = -40ºC	1000hrs	0/22
Temperature Humidity Storage	*Ta* = 85ºC, *RH* = 85%	1000hrs	0/22
Temperature Humidity Operating	*Ta* = 85ºC, *RH* = 85%, *IF* = 8mA	100hrs	0/22

< Judging Criteria For Reliability Tests >

VF	USL[1] X 1.2
IR	USL X 2.0
ΦV	LSL [2] X 0.5

Notes :

[1] USL : Upper Standard Level

[2] LSL : Lower Standard Level.

Forward Current Characteristics, Tj=25℃

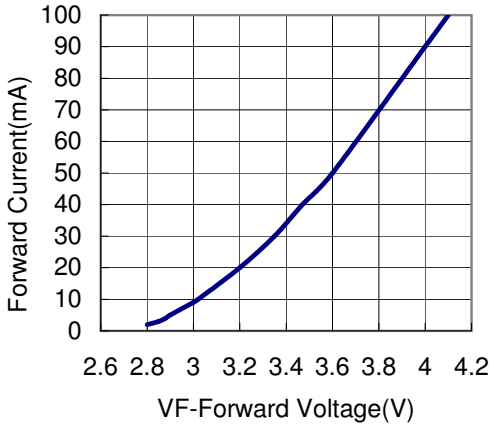


Fig 1. Forward Current vs. Forward Voltage

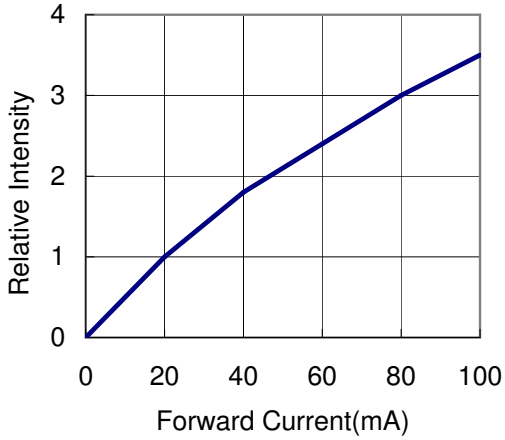


Fig 2. Relative Intensity vs. Forward Current

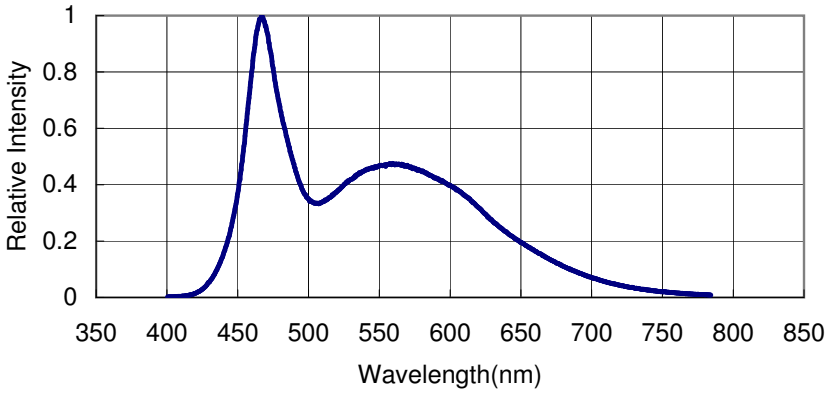
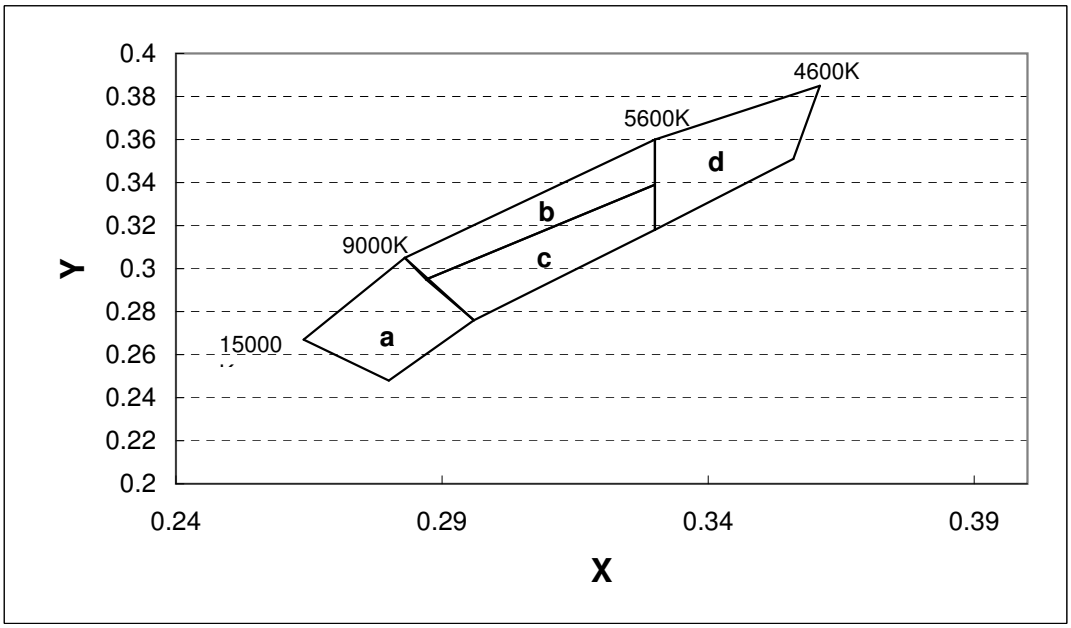


Figure 3. White Color Spectrum

Color Bins for White

Bin Code	X	Y
a	0.264	0.267
	0.28	0.248
	0.296	0.276
	0.283	0.305
b	0.283	0.305
	0.287	0.295
	0.33	0.339
	0.33	0.36

Bin Code	X	Y
c	0.287	0.295
	0.296	0.276
	0.33	0.318
	0.33	0.339
d	0.33	0.318
	0.33	0.36
	0.361	0.385
	0.356	0.351



Bin Code		
Luminous	CIE	Forward Voltage
P	a	4

Luminous Intensity (mcd) @ IF = 20mA		
Bin Code	Min.	Max.
D	100	200
E	200	400
F	400	700
G	700	1000
H	1000	2000
I	2000	3000
J	3000	4000
K	4000	5600
L	5600	7500
M	75000	10000