PRODUCT SPECIFICATION

DATE: 03/08/2005

cosmo ELECTRONICS CORPORATION	H.P LED : KLH00WXX3	NO. 61L70018	REV. 1
		SHEET 1 OF 6	

1. Features

Cosmo's high power LED packages can handle up to 350-500mA DC current. These packages are formed by bonding 3 pcs of 40 mil LED chips on a 20mmx20mm metal PCB. A heat sink is mechanically screwed to the board to cool down metal surface temperature below 70℃. The main features of these packages are as follows：

- Very high flux output per LED.
- Flat PCB package. On each PCB, the quantity of LED being adjustable from 1 to 3 to meet user's need. These LEDs being connected in series.
- Very long operation life time up to 100k hours attainable, by using a proper heat sink.
- 130 ± 10^{o} cool beam in most packages.

2. Applications

- Outdoor and indoor architectural lighting
- Reading light (car/bus/aircraft)
- Decorative/entertainment lighting
- Bollards/Security/Garden lighting
- Traffic signal
- Portable lighting (flashlight/bicycle)
- Edge-lit signs (exit sign/point of sales)
- LCD backlights
- Light guide

3. Operation and Storage Temperature

Parameter	Symbol	Value	Unit
Operation temperature	Topr	(Data to be ready, -30~+85)	℃
Storage temperature	Tstg	(Data to be ready, -40~+110)	℃

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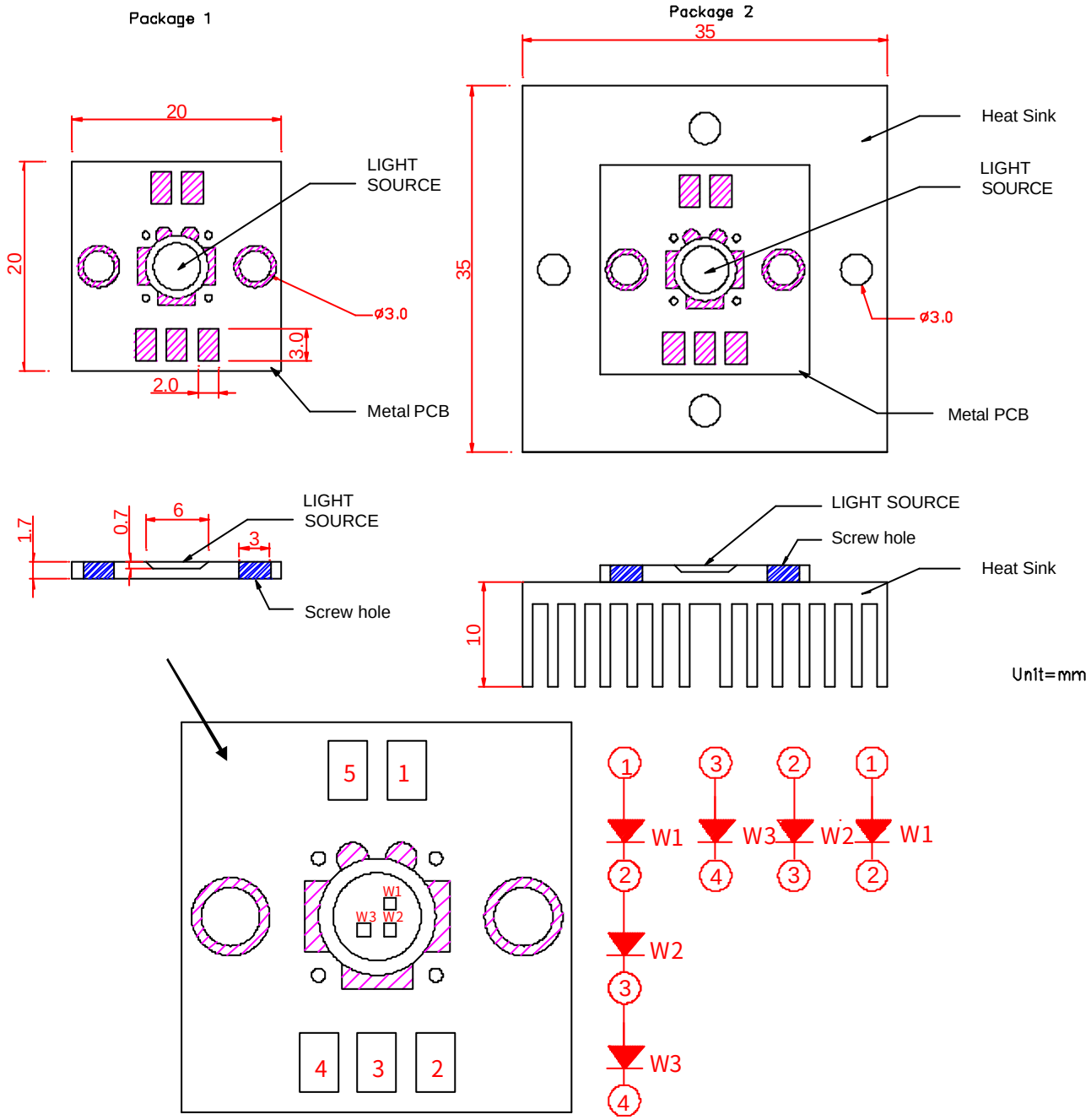
4. Dimensions

● 35(L)x35(W)x12(H)mm



5. Flux Characteristics

Flux characteristics of mono color LED at 350mA, junction temperature, Ta = 25℃

Chip quantity：3 LEDs/PCB

Part Number	Color/Wavelength (λd)	Forward Voltage (Vf)		Luminous Flux (lm)		Wattage Max. (W)	View angle ($2\theta_{\frac{1}{2}}$)
		Typ.	Max	Min	Typ.		
KLH00WXX3	(x,y) =0.28~0.35	10.8	12	34	46	4.2	130±10°

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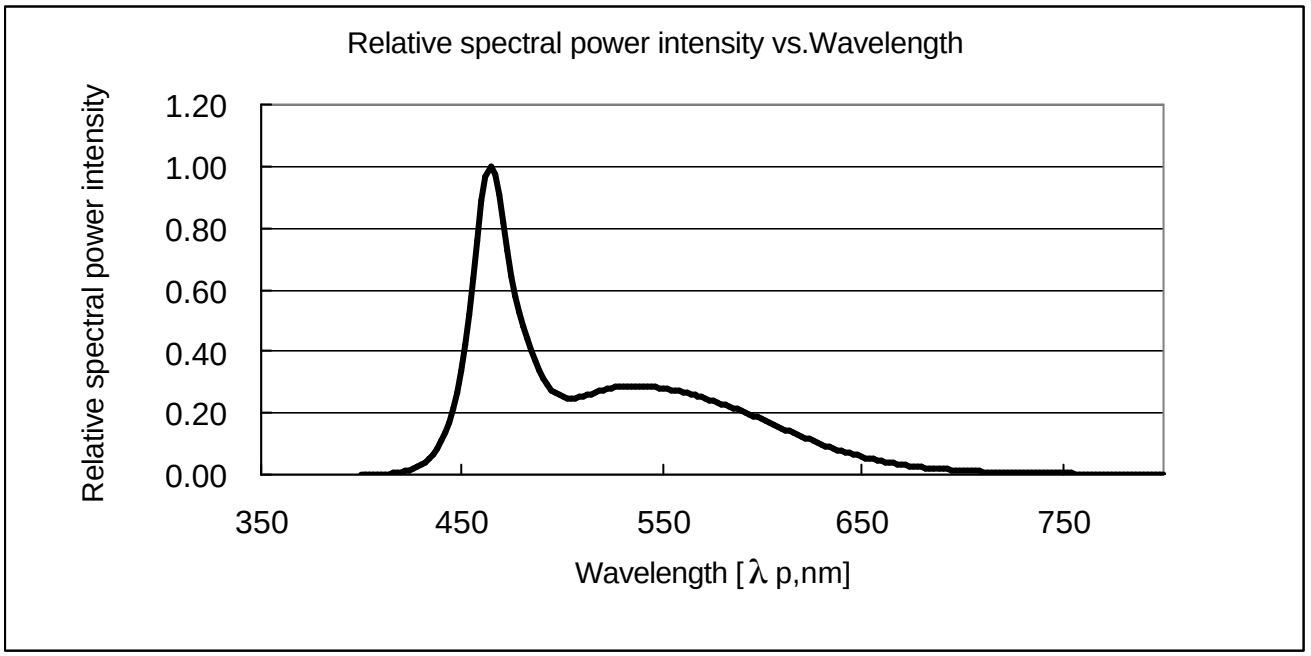
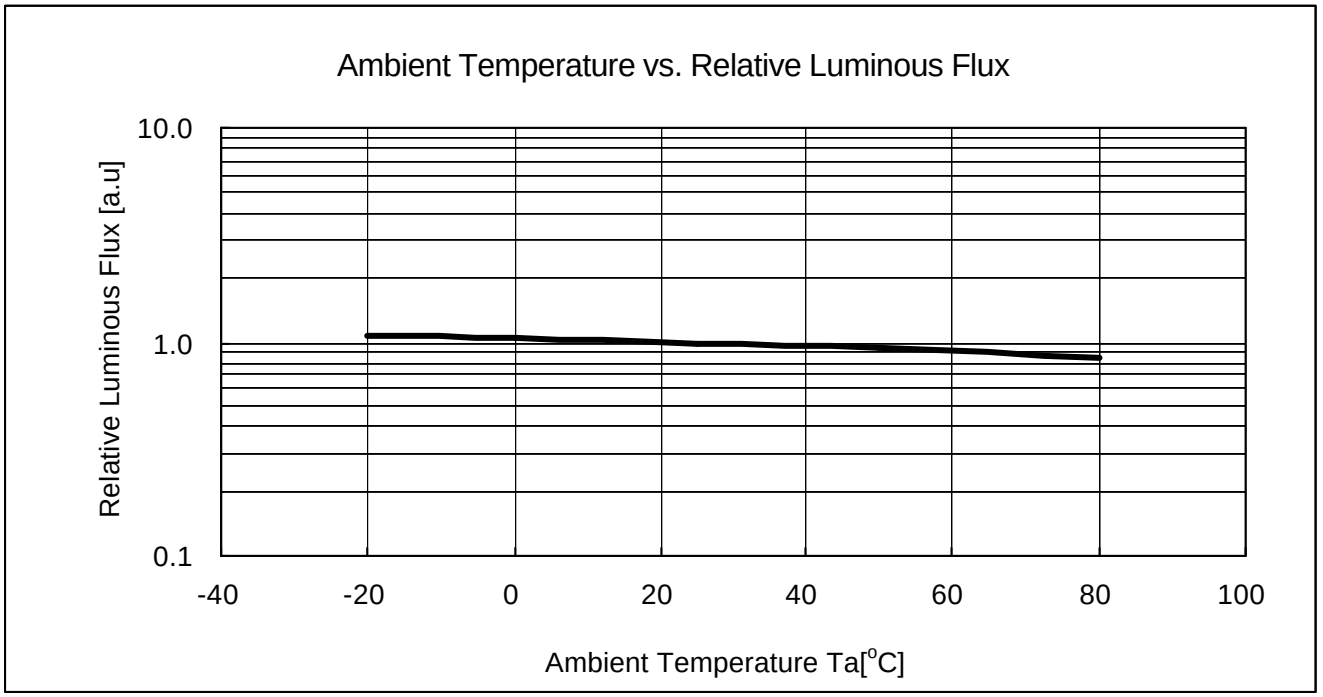
6. Wavelength Characteristics

- Relative spectral power intensity of white vs. wavelength (Ta=25℃)



7. Light Output Characteristics

- Relative light output vs. junction temperature



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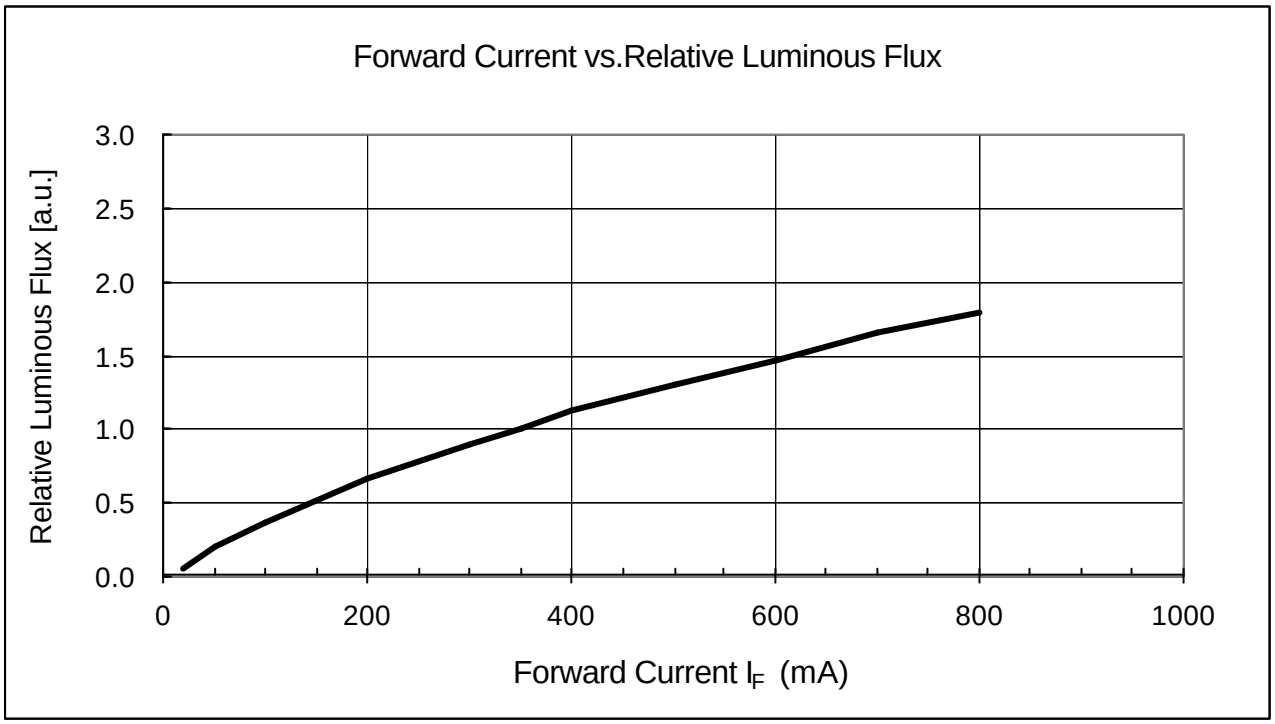
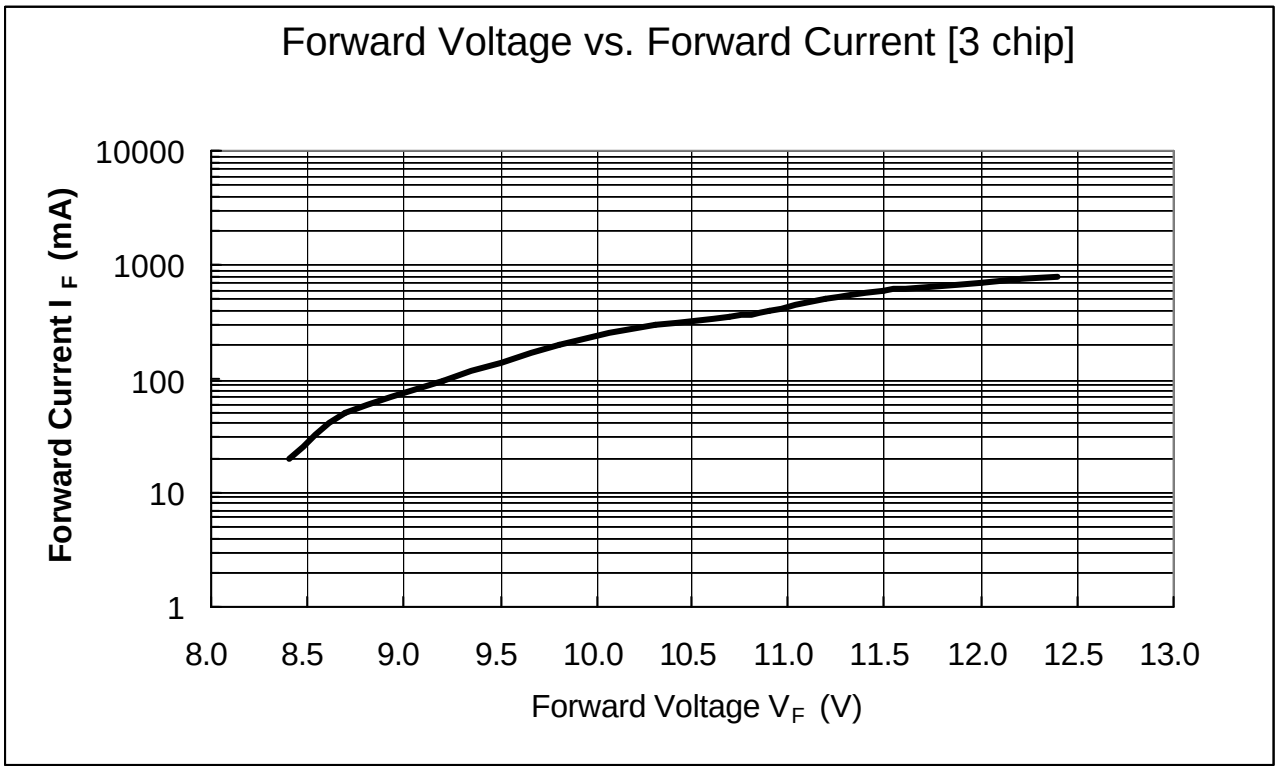
8. Spatial Radiation Pattern

● Forward current vs. relative luminous flux (Ta=25℃)



● Forward voltage vs. forward current (3 LEDs/PCB, Ta=25℃)



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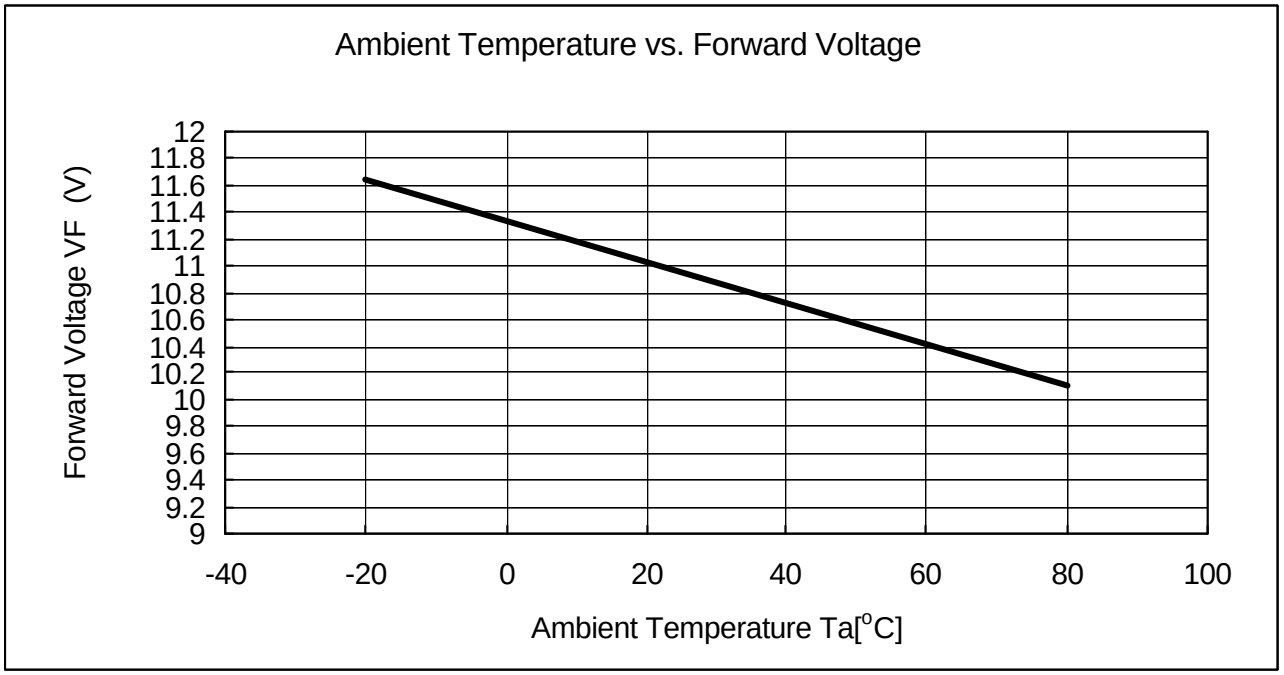
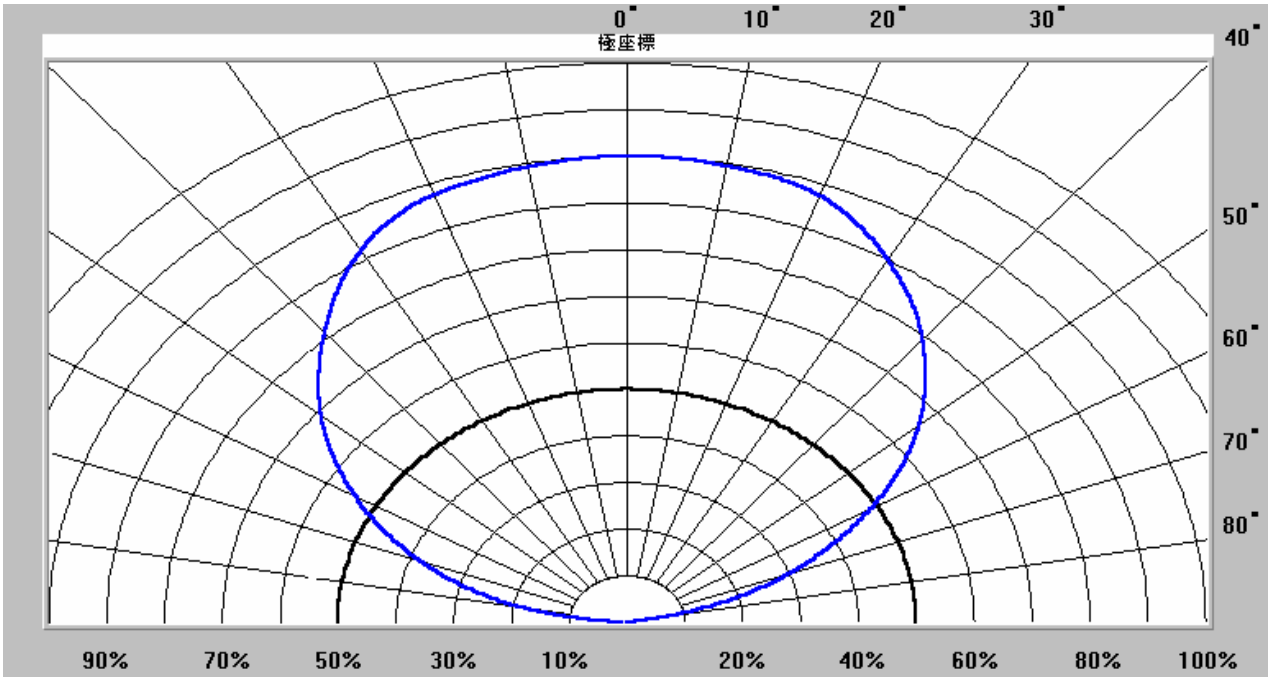
- Forward voltage vs. ambient temperature (3 LED/PCB, I_F=350mA)



9. Spatial Radiation Pattern

- **White**



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10. Reliability Test

Stress Test	Stress Conditions	Stress Duration	Failure Criteria	Failure rate
1.High temperature operation life	85℃ at 350mA	1,000 hrs	(1)Iv< 50% degradation (2)Vf max=110% initial	0/12
2.Room temperature operation life	25℃ at 350 mA	1,000 hrs		0/12
3. Low temperature operation life	-40℃ at 350 mA	1,000 hrs		0/12
4. Wet high temperature operation life	85℃ / 60% RH at 350 mA	1,000 hrs		0/12
5.Powered temperature cycle	(1.)-45℃/18min at 350 mA (2.)Transform /42min (3.)85℃ /18min at 350 mA	200 cycles		0/12
6.Temperature Cycle	(1.)-45℃ /30 min (2.)25℃ /5 min (3.)120℃ /30 min (4.)25℃ /5 min	200 cycles		0/12
7.High temperature storage	110℃	1,000 hrs		0/12
8. Low temperature storage	-40℃	1,000 hrs		0/12
9.High temperature humidity storage	60℃ / 90% RH	1,000 hrs		0/12
10.Thermal shock	(1.)-40℃ /20min (2.)Transform /20sec (3.)110℃ /20min	200 cycles		0/12