



American Opto Plus LED

L945NPWC-70D

HIGH POWER LED LAMP - WATER CLEAR

- ❖ HIGH LUMINOUS INTENSITY
- ❖ NON-PHOSPHOR WHITE
- ❖ 4 LEADED HIGH POWER
- ❖ HIGH CURRENT OPERATION

Feature

- High Luminous Intensity
- High Current Operation
- Low Profile
- Packaged in Tubes for Use with Automatic Pick and Place Equipment
- Meets JIS, SAE, ECE Automotive Color Requirements

Applications

- Commercial Outdoor Sign Board
- Automotive Exterior Light
- Traffic Signal Light

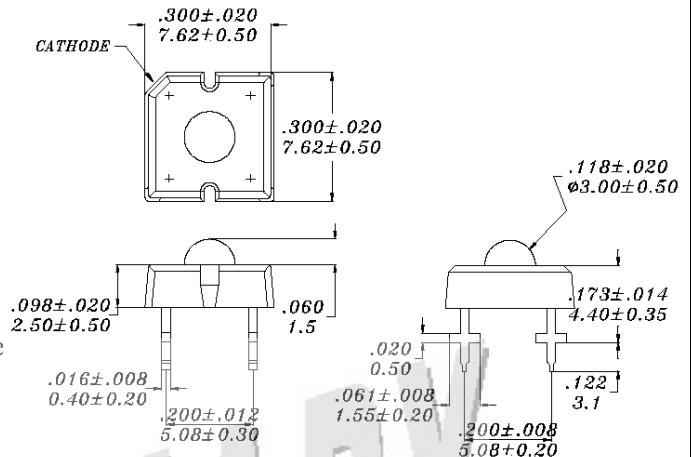
Description

- These High Intensity LEDs are Based on InGaN/Sapphire Material Technology
- Water Transparent Lens

Packing

- Components will be conditioned in tubes of 60 parts exactly
- Tubes will be put in layers of 11 tubes each. One layer will contain only one CATEGORY / CLASS couple
- Layers will be conditioned in cardboard boxes, 10 layers each

Package Dimension



Tolerance = ± 0.01inch / 0.25mm

ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

Parameter	Symbol	Max Rating	Unit
Power Dissipation	P _D	120	mW
Pulse Forward Current (Duty = 0.1, 1KHz)	I _{PF}	100	mA
Forward Current	I _F	30	mA
Reverse Voltage	V _R	5.0	V
Operating Temperature Range	T _{OPR}	-40 ~ +80	°C
Storage Temperature Range	T _{STG}	-40 ~ +100	°C

Lead Soldering Temperature [1.6mm (0.063inch) from body]: 260°C for 5 seconds

OPTICAL-ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Luminous Intensity	I _V	I _F = 20mA	770	1500		mcd
Forward Voltage	V _F	I _F = 20mA		3.5	4.0	V
Reverse Current	I _R	V _R = 5V			10	uA
Viewing Angle	2θ _{1/2}	I _F = 20mA		70		deg.
Chromaticity Coordinates	X	I _F = 20mA		0.31		
	Y			0.32		



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ELECTRICAL CHARACTERISTICS

(Ta=25°C)

Symbol	I_v		V_F		Color
Parameter	Luminous Intensity		Forward Voltage		
Condition	$I_F = 20\text{mA}$		$I_F = 20\text{mA}$		$I_F = 20\text{mA}$
Unit	mcd		V		Color Range
Binning	Grade	Range	Grade	Range	Grade
	Bin 1	770 - 1080	Q0	2.5 - 3.0	W1
	Bin 2	1080 - 1500	Q1	3.0 - 3.5	W2
	Bin 3	1500 - 2100	Q2	3.5 - 4.0	W3
					W4
					W5
					W6
					W7
					W8
					W9
				W10	

Intensity: Tolerance of minimum and maximum = $\pm 15\%$

V_F : Tolerance of minimum and maximum = $\pm 0.05\text{V}$

Color coordinates: Uncertainty = ± 0.01

Notes: Static electricity and surge damages the LED. It is recommended to use an anti-static wrist band or anti-electrostatic glove when handling LEDs. All devices, equipment and machinery must be properly grounded.



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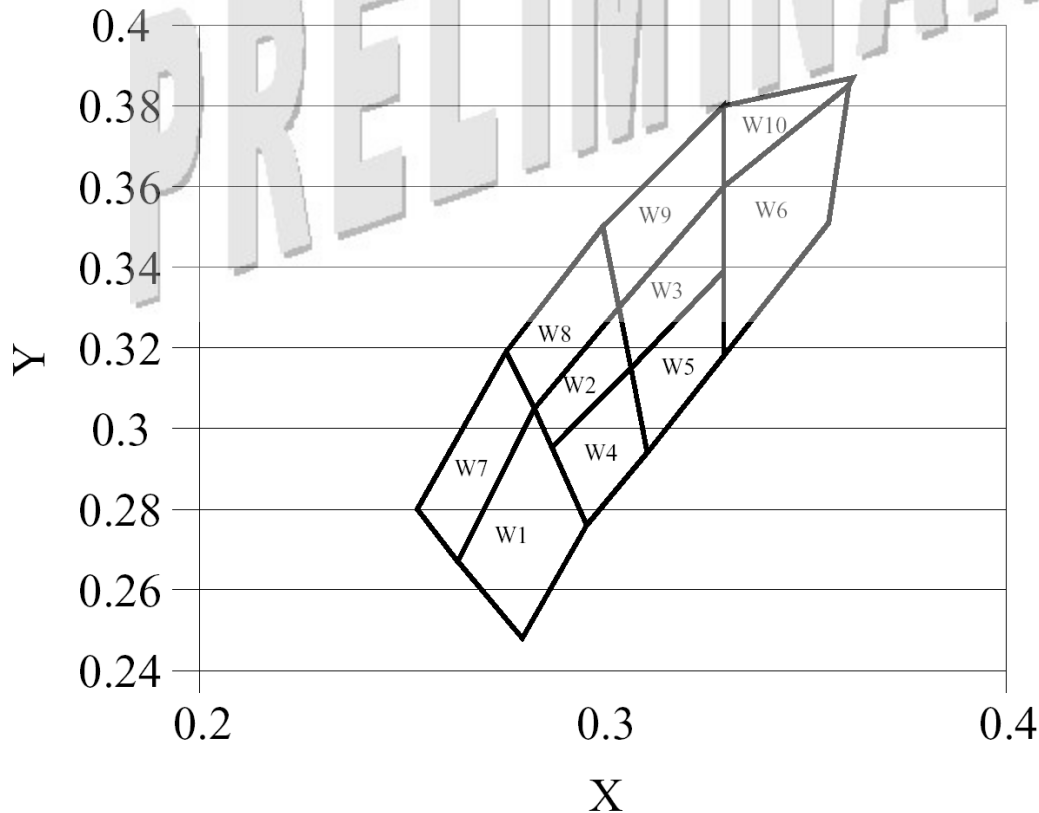
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CHROMATICITY COORDINATES BINNING

Rank		W1				W2				W3				W4			
Chromaticity	X	0.280	0.264	0.283	0.296	0.287	0.283	0.304	0.307	0.307	0.304	0.330	0.330	0.296	0.287	0.307	0.311
Coordinates	Y	0.248	0.267	0.305	0.276	0.295	0.305	0.330	0.315	0.315	0.330	0.360	0.339	0.276	0.295	0.315	0.294
Rank		W5				W6				W7				W8			
Chromaticity	X	0.311	0.307	0.330	0.330	0.330	0.330	0.361	0.356	0.264	0.254	0.276	0.283	0.283	0.276	0.300	0.304
Coordinates	Y	0.294	0.315	0.339	0.318	0.318	0.360	0.385	0.351	0.267	0.280	0.319	0.305	0.305	0.319	0.350	0.330
Rank		W9				W10											
Chromaticity	X	0.304	0.300	0.330	0.330	0.330	0.330	0.362	0.361								
Coordinates	Y	0.330	0.350	0.380	0.360	0.360	0.380	0.387	0.385								

CIE CHROMATICITY DIAGRAM



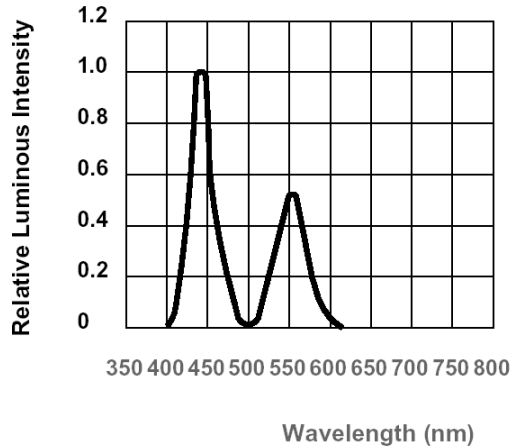


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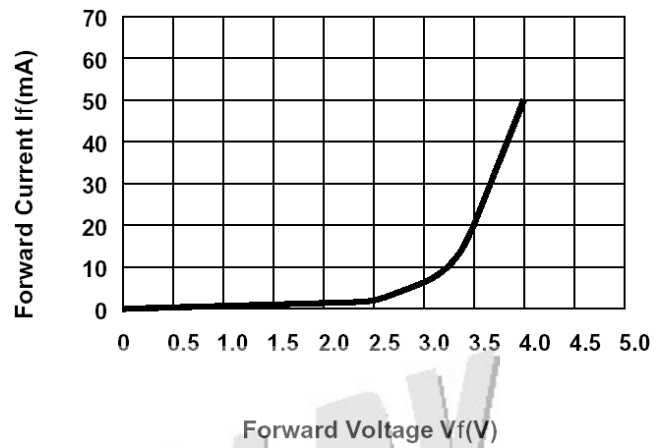
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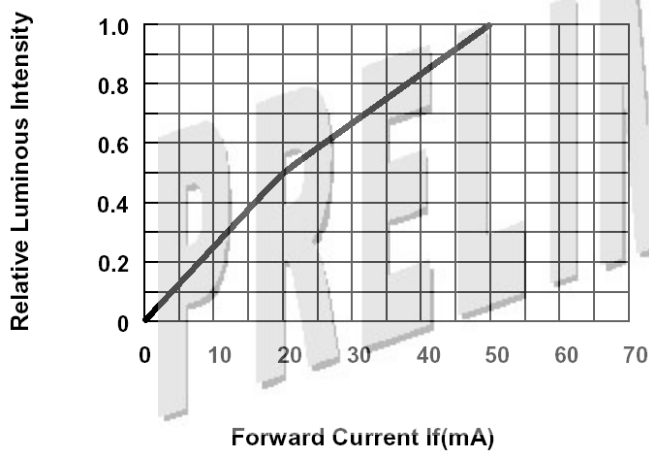
Relative Intensity vs. Wavelength



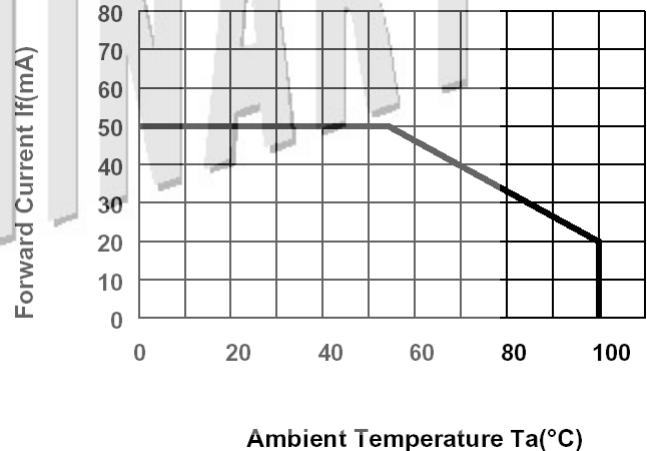
Forward Current vs. Forward Voltage



Relative Luminous Flux vs. Forward Current



Forward Current vs. Ambient Temperature
($R_{\theta_{i-a}} = 300^{\circ}\text{C/W}$)



Radiation Diagram

