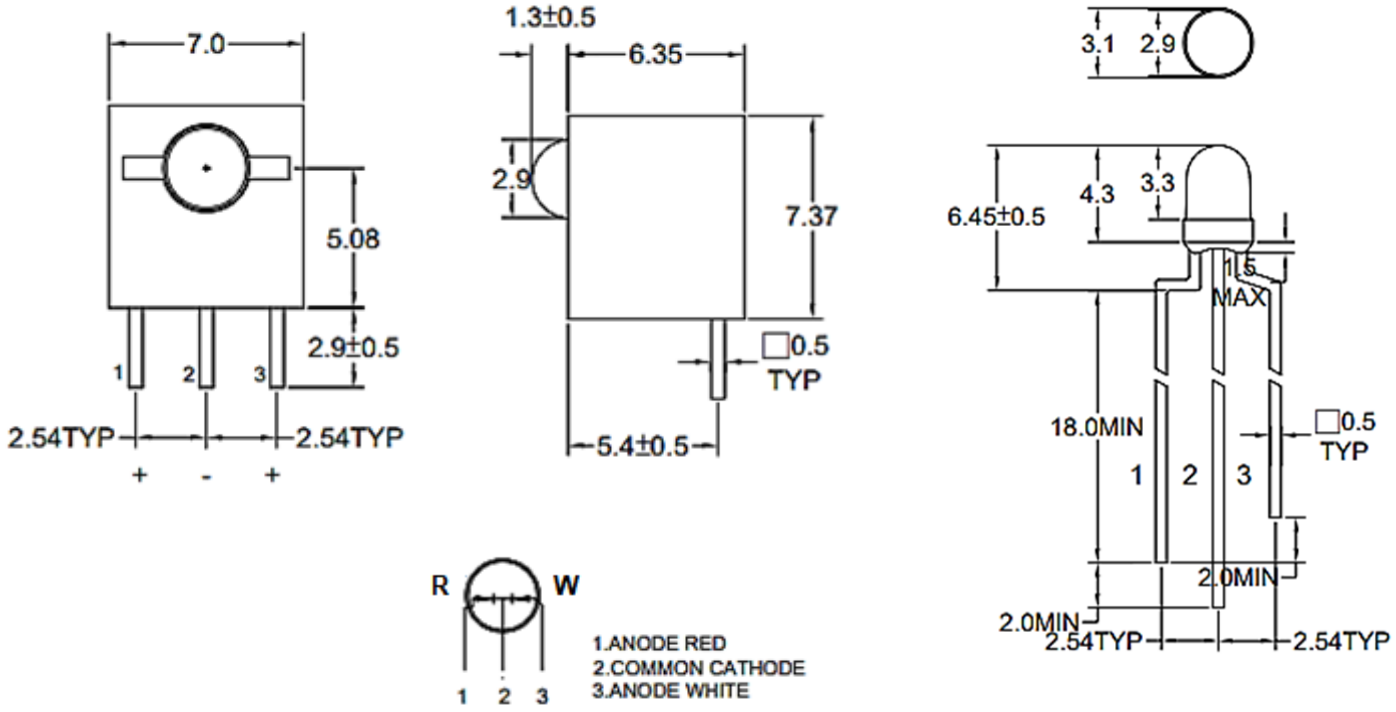
American Opto Plus LED Corp.
L359L-NEWWH9761
3mm Bi-Color Red and White LED Lamp W/ Holder

PACKAGE DIMENSION



Notes:

1. All dimension are in millimeter tolerance is ±0.25 mm unless otherwise noted.
2. Specifications are subject to change without notice.

Material	Color	
	Emitted	Lens
AlGaInP	Red	White Diffused
InGaN	White	

ABSOLUTE MAXIMUM RATINGS **(Ta=25°C)**

Parameter	Symbol	Value		Unit
		R	W	
Forward Current	If	30	30	mA
Peak Forward Current Duty 1/10 @ 10KHz	Ifp	90	100	mA
Power Dissipation	Pd	75	120	mW
Reverse Current @ 5V	Ir	10	50	μA
Electrostatic Discharge	ESD	2000	500	V
Operating Temperature Range	Topr	-40~+85	-20~+80	°C
Storage Temperature Range	Tstg	-40~+100	-30~+100	°C

OPTICAL-ELECTRICAL CHARACTERISTICS **(Ta=25°C)**

Parameter	Symbol		Test Condition	Value			Unit
				Min	Typ	Max	
Luminous intensity	Iv	R	IF = 20mA	1100	--	3400	mcd
		W		2700	--	9500	
Dominant Wavelength	λD	R		615	--	640	nm
Spectral Halfwidth	Δλ	R		--	20	--	nm
Chromaticity Coordinates	X	W		0.26	--	0.30	--
	Y			0.225	--	0.325	
Forward Voltage	Vf	R		1.5	--	2.4	V
		W		2.5	--	4.0	
Viewing angle	2Θ ½			--	50	--	Deg

Notes:

1. The forward voltage data did not including ±0.1V testing tolerance.
2. The luminous intensity data did not including ±15% testing tolerance.

LUMINOUS INTENSITY CLASSIFICATION (RED) **(IF=20mA)**

Bin Code	Min	Max	Unit
A22	1100	1500	mcd
A23	1500	1800	
A24	1800	2200	
A25	2200	2700	
A26	2700	2700	
A27	2700	3400	

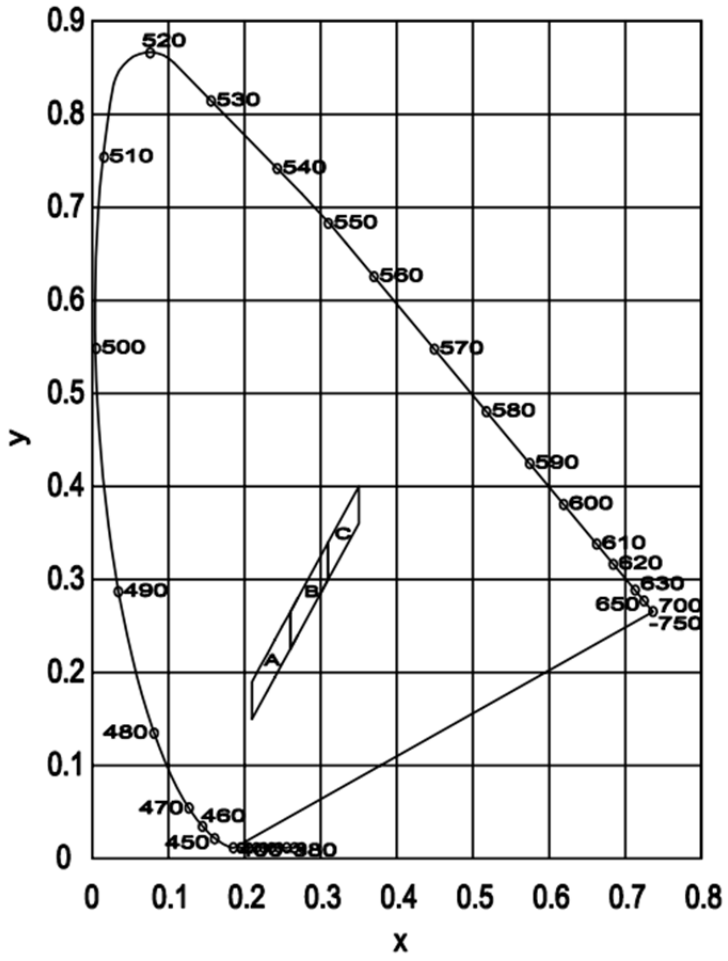
LUMINOUS INTENSITY CLASSIFICATION (WHITE) **(IF=20mA)**

Bin Code	Min	Max	Unit
A26	2700	3400	mcd
A27	3400	4000	
A28	4000	5000	
A29	5000	6200	
A30	6200	7700	
A31	7700	9500	

CHROMATICITY COODINATES BIN TABLE

Bin	X	Y	Bin	X	Y
B1	0.26	0.265	B2	0.27	0.280
	0.26	0.225		0.27	0.240
	0.27	0.240		0.28	0.255
	0.27	0.280		0.28	0.295
Bin	**X**	**Y**	**Bin**	**X**	**Y**
B3	0.28	0.295	B4	0.29	0.31
	0.28	0.255		0.29	0.27
	0.29	0.27		0.30	0.285
	0.29	0.31		0.30	0.325

CIE CHROMATICITY DIAGRAM



ELECTRICAL-OPTICAL CHARACTERISTIC CURVES (RED) **(Ta=25°C)**

Fig.1 Forward current vs. Forward Voltage

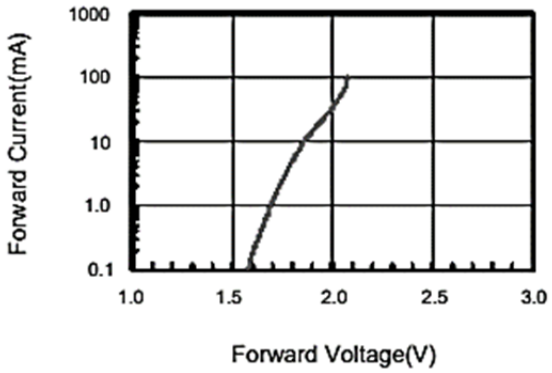


Fig.2 Relative Intensity vs. Forward Current

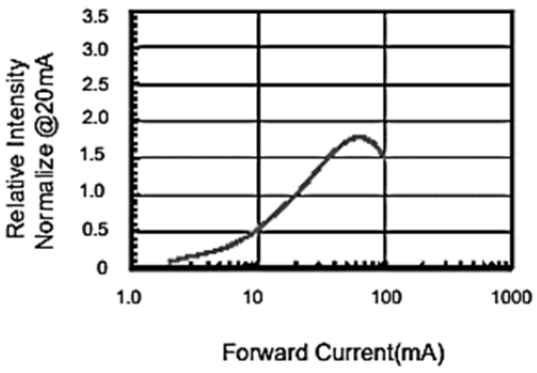


Fig.3 Forward Voltage vs. Temperature

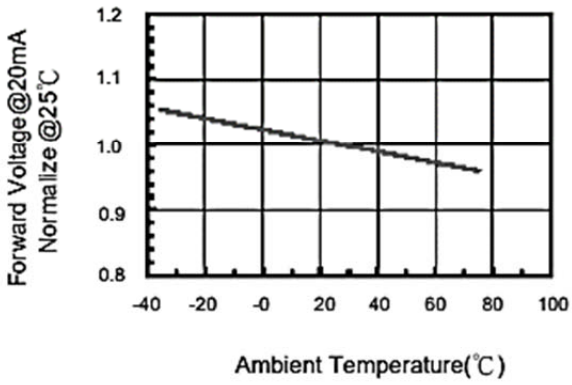


Fig.4 Relative Intensity vs. Temperature

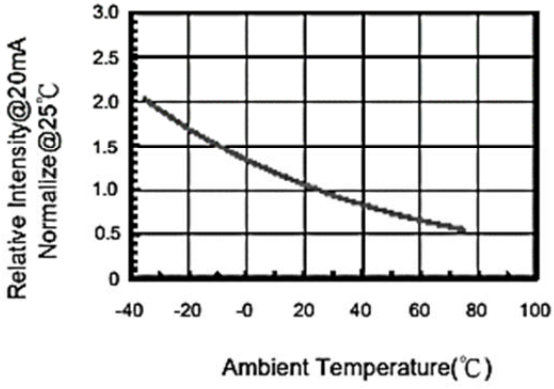
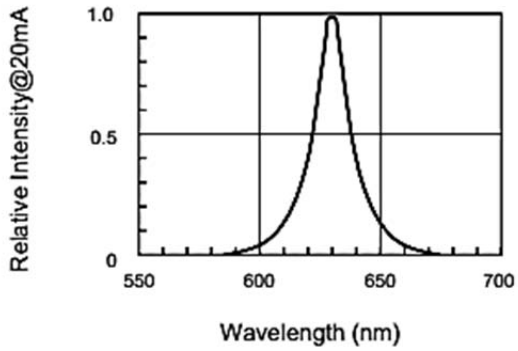


Fig.5 Relative Intensity vs. Wavelength



ELECTRICAL-OPTICAL CHARACTERISTIC CURVES (WHITE) **(Ta=25°C)**

Fig.1 Forward current vs. Forward Voltage

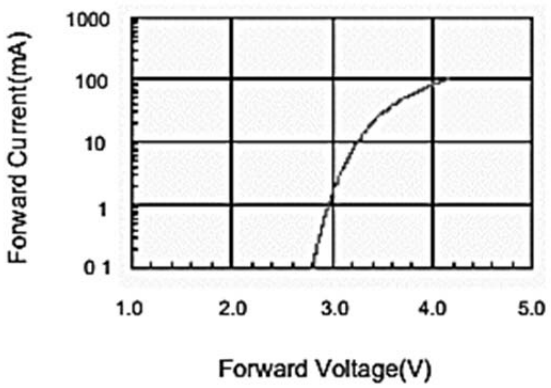


Fig.2 Relative Intensity vs. Forward Current

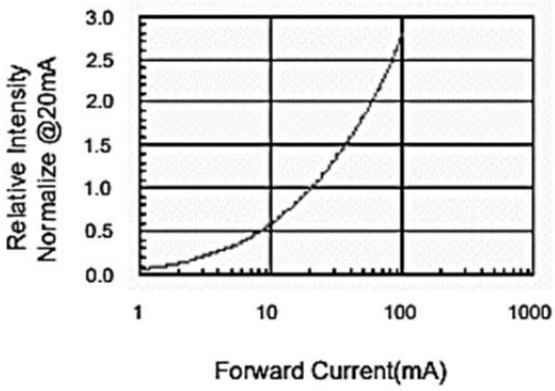


Fig.3 Forward Voltage vs. Temperature

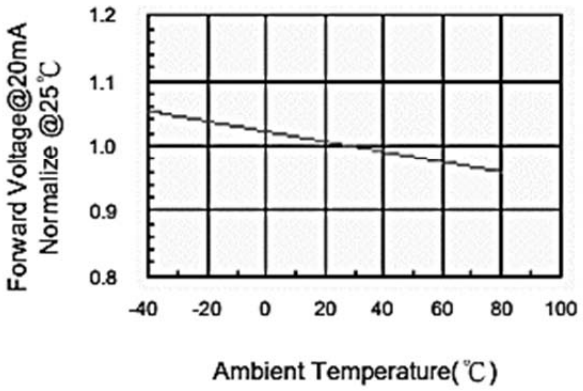


Fig.4 Relative Intensity vs. Temperature

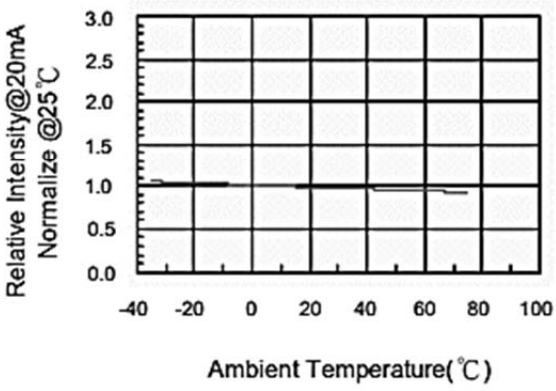
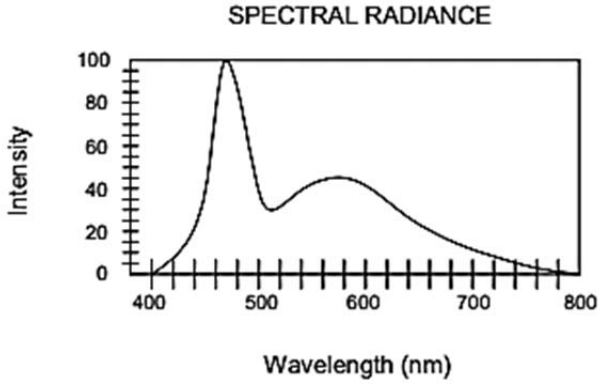


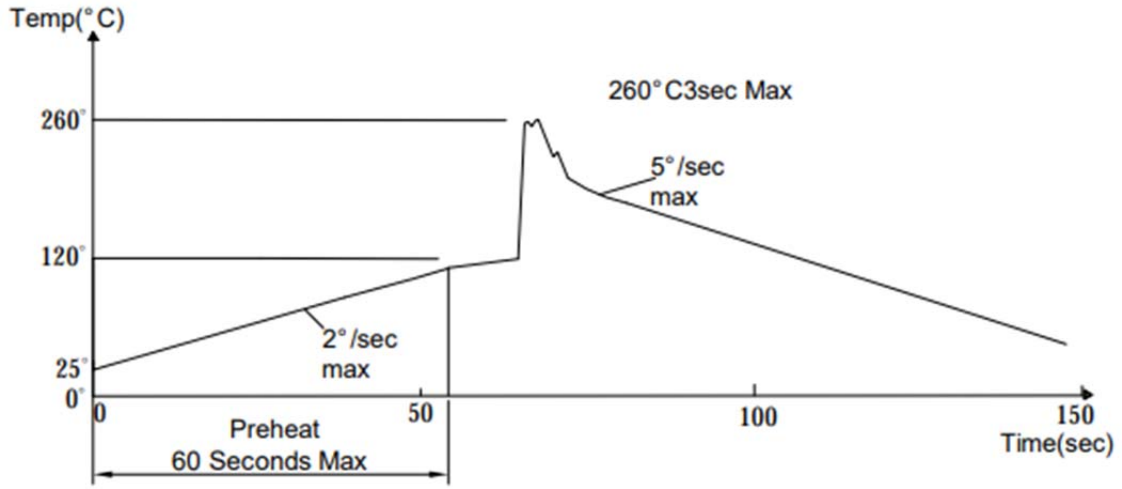
Fig.5 Luminous Spectrum(Ta=25℃)



RECOMMENDED SOLDERING CONDITIONS

1. **Iron:**
   Soldering Iron: 30W Max
   Temperature: 350°C Max
   Soldering time: 3 Seconds Max (one time only)
   Distance: 2mm Min (from solder joint body)

2. **Wave Soldering Profile**
   Dip Soldering
   Preheat: 120°C Max
   Preheat Time: 60 Seconds Max
   Ramp-up: 2°C/sec Max
   Ramp-down: -5°C/sec Max
   Solder Bath: 260°C Max
   Dipping Time: 3 Seconds Max
   Distance: 2mm Min (from solder joint body)



Note: Wave solder should not be made more than one time.

RELIABILITY TEST

Test Item	Test Condition	Description	Reference Standard
Operating Life Test	1.Under Room Temperature 2.If=20mA 3.t=1000 hrs (-24hrs, +72hrs)	This test is conducted for the purpose of detemining the resisance of a part in electrical and themal stressed.	MIL-STD-750: 1026 MIL-STD-883: 1005 JIS C 7021: B-1
High Temperature Storage Test	1.Ta=105℃±5℃ 2.t=1000 hrs (-24hrs, +72hrs)	The purpose of this is the resistance of the device which is laid under ondition of high temperature for hours.	MIL-STD-883:1008 JIS C 7021: B-10
Low Temperature Storage Test	1.Ta=-40℃±5℃ 2.t=1000 hrs (-24hrs, +72hrs)	The purpose of this is the resistance of the device which is laid under condition of low temperature for hours.	JIS C 7021: B-12
High Temperature High Humidity Test	1.Ta=65℃±5℃ 2.RH=90％~95％ 3.t=240hrs ±2hrs	The purpose of this test is the resistance of the device under tropical for hous.	MIL-STD-202:103B JIS C 7021: B-11
Thermal Shock Test	1.Ta=105℃±5℃&-40℃±5℃ (10min) (10min) 2.total 10 cycles	The purpose of this is the resistance of the device to sudden extreme changes in high and low temperature.	MIL-STD-202: 107D MIL-STD-750: 1051 MIL-STD-883: 1011
Solder Resistance Test	1.T.Sol=260℃±5℃ 2.Dwell time= 10 ±1sec.	This test intended to determine the thermal characteristic resistance of the device to sudden exposures at extreme changes in temperature when soldering the lead wire.	MIL-STD-202: 210A MIL-STD-750: 2031 JIS C 7021: A-1
Solderability Test	1.T.Sol=230℃±5℃ 2.Dwell time=5 ±1sec	This test intended to see soldering well performed or not.	MIL-STD-202: 208D MIL-STD-750: 2026 MIL-STD-883: 2003 JIS C 7021: A-2