

Precision Subminiature LEDs

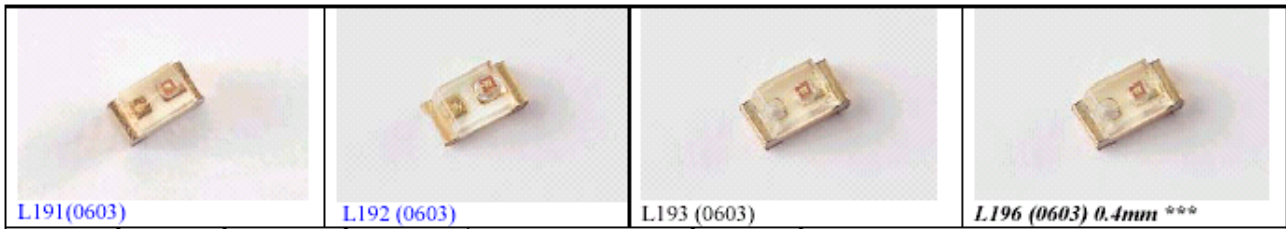
- Right Angle SMD
- Single Color PC Board SMD
- Lens Type SMD
- Reflector Type SMD
- High Power Single Color SMD
- Full Color SMD
- T 1 (3 mm) Lamp Type
- T 1&3/4 (5 mm) Lamp Type
- Single Chip Based Lamp Type
- MR-16 LED

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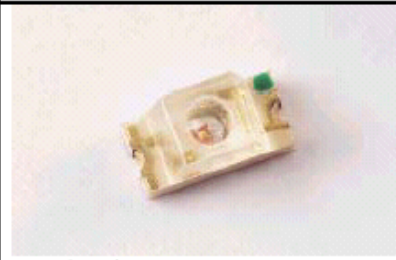
Surface Mount Device LEDs

AOP P/N Series	Size (L * W * H) Unit : mm	Lens Shape	Available Lens Color	Color Description	Page
RIGHT ANGLE SMD					
L110 (1204)	3.2 * 1.5 * 1.0	Oval	Water Clear	Single Color	2
L111 (0803)	2.1 * 1.3 * 0.7	Oval	Water Clear	Single Color	2
L120 (1104)	3 * 2 * 1	Oval	Water Clear	Single Color	2
L200 (Bikini)	3.2 * 1.3 * 1.2	Flat	Water Clear	Single Color	6
STANDARD SINGLE COLOR PCBOARD SMD					
L150 (1206)	3.2 * 1.6 * 1.1	Flat	Water Clear	Single Color	2
L151 (1206)	3.2 * 1.6 * 0.75	Flat	Water Clear	Single Color	3
L171 (0805)	2 * 1.25 * 0.75	Flat	Water Clear	Single Color	3
L172 (0805)	2 * 1.25 * 1.1	Flat	Water Clear	Single Color	3
L174 (0805) (Super Thin)	2 * 1.25 * 0.35	Flat	Water Clear	Single Color	3
L191 (0603)	1.6 * 0.8 * 1.1	Flat	Water Clear	Single Color	4
L192 (0603)	1.6 * 0.8 * 0.75	Flat	Water Clear	Single Color	4
L193 (0603)	1.6 * 0.8 * 0.65	Flat	Water Clear	Single Color	4
L196 (0603) (Super Thin)	1.6 * 0.8 * 0.4	Flat	Water Clear	Single Color	4
LENS TYPE SMD					
L123 (1106)	3 * 1.5 * 1.4	Inner Dome	Water Clear	Single Color	5
L153 (1206)	3.2 * 1.6 * 1.8	Dome Lens	Water Clear	Single Color	5
L163 (1508)	3.8 * 2 * 2.7	Dome Lens	Water Clear	Single Color	5
REFLECTOR TYPE SMD					
L100 (1108)	3 * 2 * 1.4	Flat	Water Clear	Single Color	6
L200 (Bikini)	3.2 * 1.3 * 1.2	Flat	Water Clear	Single Color	6
L955 (1411)	3.2 * 1.8 * 1.9	Flat	Water Clear	Single - Full Color	6, 7, 9
HIGH POWER Single Color SMD					
L955 (PLCC-4)	3.2 * 1.8 * 1.9	Flat	Water Clear	Single Color	6
L995 (Novaled)	6 * 6 * 1.3	Flat	Water Clear	Single Color	7
BI-COLOR SMD					
L125 (1104)	3 * 1 * 2	Flat	Water Clear	Bi-Color	8
L145 (0605)	1.6 * 1.5 * 0.7	Flat	Water Clear	Bi-Color	8
L155 (1110)	3 * 2.5 * 1.1	Flat	Water Clear	Bi-Color	8
L165 (1311)	3.3 * 2.9 * 1.1	Flat	Water Clear	Bi-Color	8
L955 (1411)	3.2 * 1.8 * 1.9	Flat	Water Clear	Bi-Color	7
FULL-COLOR SMD					
L340 (0606)	1.6 * 1.6 * 0.75	Flat	Water Clear	Full-Color	9
L360 (1214)	3.2 * 3.6 * 1.1	Flat	Water Clear	Full-Color	9
L955 (1411)	3.2 * 1.8 * 1.9	Flat	Water Clear	Full-Color	9
SUPER THIN SMD LED					
L174 (0805) (Super Thin)	2 * 1.25 * 0.35	Flat	Water Clear	Single Color	3
L196 (0603) (Super Thin)	1.6 * 0.8 * 0.4	Flat	Water Clear	Single Color	4



Part Number	Lighting Color	Material	Vf(V)		Wavelength λ (nm)			Iv(mod)	Package Dimension
			Typ	Max	λ D	λ p	Δ λ	Typ	
L191GC	Green	GaP	2.2	2.6	570	568	30	12	
L191YC	Yellow	GaAsP	2.1	2.5	590	589	35	12	
L191EC	HE Red	GaAsP	2.0	2.5	620	630	45	12	
L191SRC	Super Red	AlGaAs	1.85	2.4	645	660	45	40	
L191BC	Blue	SiC	3.6	4.5	455	430	25	12	
L191QBC	Ultra Blue	GaN	3.7	4.0	470	443	65	80	
L191QGC	Ultra Green	AlInGaP	2.2	2.6	575	574	25	60	
L191QYC	Ultra Yellow	AlInGaP	2.0	2.6	590	592	20	60	
L191QEC	Ultra HE Red	AlInGaP	2.4	2.6	620	630	20	65	
L191QRC	Ultra Red	AlInGaP	2.4	2.6	630	650	22	60	
L191LWC	White	InGaN	3.6	4.2	X=0.29 Y=0.31	468	---	65	
L192GC	Green	GaP	2.2	2.6	570	568	30	12	
L192YC	Yellow	GaAsP	2.1	2.5	590	589	35	12	
L192EC	HE Red	GaAsP	2.0	2.5	620	630	45	12	
L192SRC	Super Red	AlGaAs	1.85	2.4	645	660	45	40	
L192BC	Blue	SiC	3.6	4.5	455	430	25	12	
L192QBC	Ultra Blue	GaN	3.7	4.0	470	443	65	80	
L192QGC	Ultra Green	AlInGaP	2.2	2.6	575	574	25	60	
L192QYC	Ultra Yellow	AlInGaP	2.0	2.6	590	592	20	60	
L192QEC	Ultra HE Red	AlInGaP	2.4	2.6	620	630	20	65	
L192QRC	Ultra Red	AlInGaP	2.4	2.6	630	650	22	60	
L192LWC	White	InGaN	3.6	4.2	X=0.29 Y=0.31	468	---	65	
L193GC	Green	GaP	2.2	2.6	570	568	30	12	
L193YC	Yellow	GaAsP	2.1	2.5	590	589	35	12	
L193EC	HE Red	GaAsP	2.0	2.5	620	630	45	12	
L193SRC	Super Red	AlGaAs	1.85	2.4	645	660	45	40	
L193BC	Blue	SiC	3.6	4.5	455	430	25	12	
L193QBC	Ultra Blue	GaN	3.7	4.0	470	443	65	80	
L193QGC	Ultra Green	AlInGaP	2.2	2.6	575	574	25	60	
L193QYC	Ultra Yellow	AlInGaP	2.0	2.6	590	592	20	60	
L193QEC	Ultra HE Red	AlInGaP	2.4	2.6	620	630	20	65	
L193QRC	Ultra Red	AlInGaP	2.4	2.6	630	650	22	60	
L193LWC	White	InGaN	3.6	4.2	X=0.29 Y=0.31	468	---	65	
** Ultra Thin 0603 0.40mm Thickness SMD LED **									
L196GC	Green	GaP	2.2	2.6	570	568	30	12	
L196YC	Yellow	GaAsP	2.1	2.5	590	589	35	12	
L196EC	HE Red	GaAsP	2.0	2.5	620	630	45	12	
L196SRC	Super Red	AlGaAs	1.85	2.4	645	660	45	40	
L196BC	Blue	SiC	3.6	4.5	455	430	25	12	
L196QBC	Ultra Blue	GaN	3.7	4.0	470	443	65	80	
L196QGC	Ultra Green	AlInGaP	2.2	2.6	575	574	25	60	
L196QYC	Ultra Yellow	AlInGaP	2.0	2.6	590	592	20	60	
L196QEC	Ultra HE Red	AlInGaP	2.4	2.6	620	630	20	65	
L196QRC	Ultra Red	AlInGaP	2.4	2.6	630	650	22	60	
L196LWC	White	InGaN	3.6	4.2	X=0.29 Y=0.31	468	---	65	

Lens type SMD (Dome & Inner Lens)



L123 (1106)



L153 (1206)



L163 (1508)

Part Number	Lighting Color	Material	Vf(V)		Wavelength λ (nm)			Iv(mod) Typ	Package Dimension
			Typ	Max	λ D	λ p	Δ λ		
L123GC	Green	GaP	2.2	2.6	570	568	30	24	<p>UNIT:mm TOLERANCE:±0.25</p>
L123YC	Yellow	GaAsP	2.1	2.5	590	589	35	9	
L123EC	HE Red	GaAsP	2.0	2.5	620	630	45	24	
L123SRC	Super Red	AlGaAs	1.85	2.4	645	660	45	48	
L123BC	Blue	SiC	3.6	4.5	455	430	25	20	
L123MBC	Ultra Blue	GaN	3.7	4.0	470	443	65	26	
L123QGC	Ultra Green	AllnGaP	2.2	2.6	575	574	25	65	
L123QYC	Ultra Yellow	AllnGaP	2.0	2.6	590	592	20	100	
L123QEC	Ultra HE Red	AllnGaP	2.4	2.6	620	630	20	75	
L123QRC	Ultra Red	AllnGaP	2.4	2.6	630	650	22	100	
L123LWC	White	InGaN	3.6	4.2	X=0.29 Y=0.31	468	---	110	
L153GC	Green	GaP	2.2	2.6	570	568	30	40	<p>UNIT:mm TOLERANCE:±0.25</p>
L153YC	Yellow	GaAsP	2.1	2.5	590	589	35	40	
L153EC	HE Red	GaAsP	2.0	2.5	620	630	45	40	
L153SRC	Super Red	AlGaAs	1.85	2.4	645	660	45	100	
L153BC	Blue	SiC	3.6	4.5	455	430	25	40	
L153MBC	Ultra Blue	GaN	3.7	4.0	470	443	65	60	
L153QGC	Ultra Green	AllnGaP	2.2	2.6	575	574	25	95	
L153QYC	Ultra Yellow	AllnGaP	2.0	2.6	590	592	20	150	
L153QEC	Ultra HE Red	AllnGaP	2.4	2.6	620	630	20	95	
L153QRC	Ultra Red	AllnGaP	2.4	2.6	630	650	22	150	
L153LWC	White	InGaN	3.6	4.2	X=0.29 Y=0.31	468	---	150	
L163GC	Green	GaP	2.2	2.6	570	568	30	40	<p>UNIT:mm TOLERANCE:±0.25</p>
L163YC	Yellow	GaAsP	2.1	2.5	590	589	35	40	
L163EC	HE Red	GaAsP	2.0	2.5	620	630	45	40	
L163SRC	Super Red	AlGaAs	1.85	2.4	645	660	45	100	
L163BC	Blue	SiC	3.6	4.5	455	430	25	40	
L163MBC	Ultra Blue	GaN	3.7	4.0	470	443	65	60	
L163QGC	Ultra Green	AllnGaP	2.2	2.6	575	574	25	95	
L163QYC	Ultra Yellow	AllnGaP	2.0	2.6	590	592	20	150	
L163QEC	Ultra HE Red	AllnGaP	2.4	2.6	620	630	20	95	
L163QRC	Ultra Red	AllnGaP	2.4	2.6	630	650	22	150	
L163LWC	White	InGaN	3.6	4.2	X=0.29 Y=0.31	468	---	150	

SMD LED LAMP REFLECTOR TYPE



L100 (1108)



L200 Bikini Right Angle

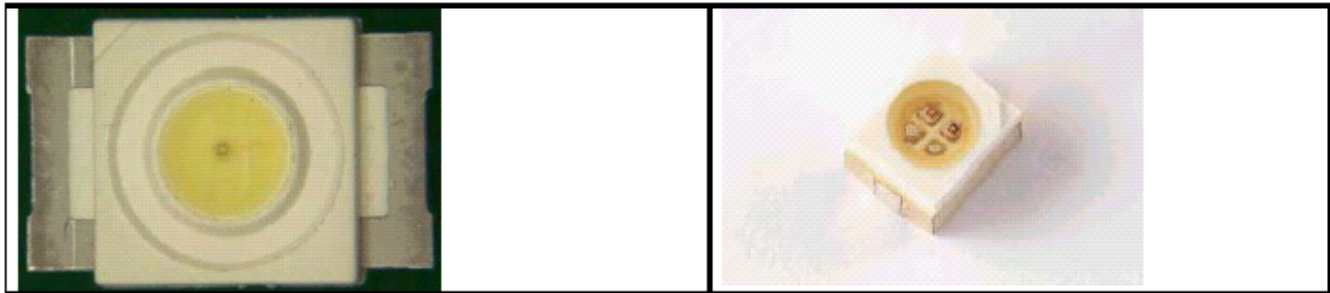


L955 (PLCC-2)



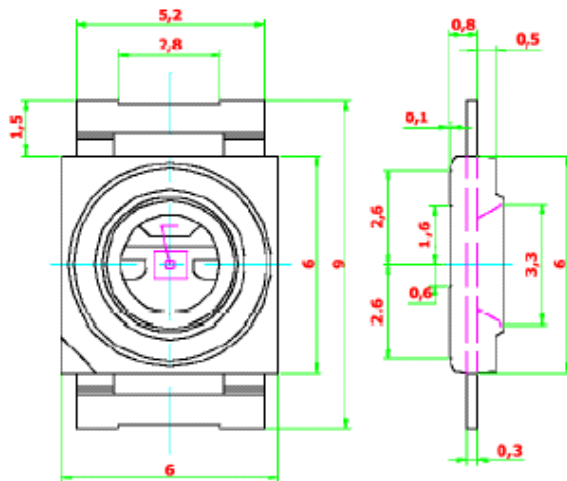
L955XC-P4 (PLCC-4)

Part Number	Lighting Color	Material	Vf(V)		Wavelength λ (nm)			lv(mcd)	Package Dimension
			Typ	Max	λ _D	λ _p	Δ λ	Typ	
L100GC	Green	GaP	2.2	2.6	570	568	30	24	
L100YC	Yellow	GaAsP	2.1	2.5	590	589	35	24	
L100EC	HE Red	GaAsP	2.0	2.5	620	630	45	24	
L100SRC	Super Red	AlGaAs	1.85	2.4	645	660	45	80	
L100BC	Blue	SiC	3.6	4.5	455	430	25	24	
L100MBC	Ultra Blue	GaN	3.7	4.0	470	443	65	100	
L100QGC	Ultra Green	AlInGaP	2.2	2.6	575	574	25	120	
L100QYC	Ultra Yellow	AlInGaP	2.0	2.6	590	592	20	120	
L100QEC	Ultra HE Red	AlInGaP	2.4	2.6	620	630	20	130	
L100QRC	Ultra Red	AlInGaP	2.4	2.6	630	650	22	120	
L100LWC	White	InGaN	3.6	4.2	X=0.29 Y=0.31	468	—	130	
L200LBC	Ultra Blue	GaN	3.7	4.0	470	443	65	430	
L200LPGC	Ultra Green	GaN	3.7	4.0	510	525	25	550	
L200UYC	Ultra Yellow	AlInGaP	2.0	2.6	590	592	20	530	
L200UEC	Ultra Red	AlInGaP	2.4	2.6	620	630	22	550	
L200LWC	White	InGaN	3.6	4.2	X=0.29 Y=0.31	468	—	450	
PLCC – 2 PACKAGE REFLECTOR TYPE SMD (Max If = 30 mA)									
L955GC	Green	GaP	2.2	2.6	570	568	30	30	
L955YC	Yellow	GaAsP	2.1	2.6	590	585	40	30	
L955EC	HE RED	GaAsP	2.1	2.6	640	635	40	30	
L955UYC	Ultra Bright Yellow	AlInGaP	2.0	2.6	591	593	15	280	
L955UEC	Ultra Bright Orange	AlInGaP	2.0	2.6	625	636	22	280	
L955MEC	Ultra Red	TS AlInGaP	2.0	2.6	625	635	22	450	
L955MYC	Ultra Bright Yellow	TS AlInGaP	2.0	2.6	591	593	15	420	
L955LPGC	Ultra Green	GaN	3.7	4.2	518	525	35	500	
L955LBC	Blue	GaN	3.7	4.2	470	468	26	180	
L955LWC	White	InGaN	3.6	4.2	X=0.29 Y=0.31	468	—	550	
High Current ** PLCC – 4 REFLECTOR TYPE SMD PACKAGE (MAX If = 30-70 mA) ** Viewing Angle 120 Degrees ***									
L955UYC-P4	Ultra Bright Yellow	AlInGaP	2.0	2.6	591	593	15	710	
L955UEC-P4	Ultra Bright Orange	AlInGaP	2.0	2.6	625	636	22	710	
L955MEC-P4	Ultra Red	TS AlInGaP	2.0	2.6	625	635	22	850	
L955MYC-P4	Ultra Bright Yellow	TS AlInGaP	2.0	2.6	591	593	15	850	
L955LPGC-P4	Ultra Green	GaN	3.7	4.2	518	525	35	900	
L955UBC-P4	Blue	GaN	3.7	4.2	470	468	26	550	
L955LWC-P4	White	InGaN	3.6	4.2	X=0.29 Y=0.31	468	—	710 ~ 1120	



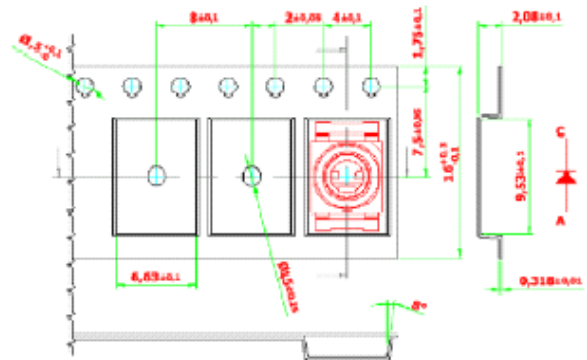
*** NOVALED series ***

Super High Power SMD Package (75-175mA max)



Taping And Orientation.

Reels come in quantity of 1000 units.
Reel diameters are 330 mm.



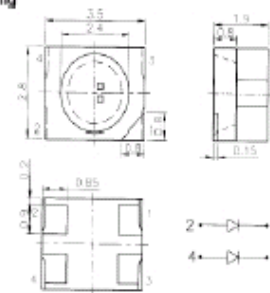
1. All dimensions in millimeters
2. Tolerance is ±0.1 unless otherwise specified

Part Number	Lighting Color	Material	Vf(V)		Wavelength h λ (nm)	Forward Current (If) (mA)		Intensity (mcd) @ Typ. mA		Viewing Angle Degrees
			Typ	Max		Typ	Max	Typ.	Max.	
L995LWC	White	InGaN	5.5	6.5	X=0.31 Y=0.32	75	75	1125	1800	120
L995LBC	Blue	InGaN	5.5	6.5	470	75	75	280	450	120
L995LGC	Green	InGaN	5.5	6.5	525	75	75	1120	1800	120
L995UEC	Red	AlInGaP	2.2	2.8	625	150	175	2240	2800	120
L995UYC	Yellow	AlInGaP	2.2	2.8	589	150	175	2240	2800	120

Bi-Color Reflector SMD

L955GYC	Green	GaP	2.2	2.6	570	568	30	30
	Yellow	GaAsP	2.1	2.5	590	589	35	15
L955EGC	HE Red	GaAsP	2.0	2.5	620	630	45	30
	Green	GaP	2.2	2.6	570	568	30	30
L955EYC	HE Red	GaAsP	2.0	2.5	620	630	45	30
	Yellow	GaAsP	2.1	2.5	590	589	35	15
L955SRGC	Super Red	AlGaAs	1.85	2.4	645	660	45	95
	Green	GaP	2.2	2.6	570	568	30	30
L165SRQGC	Super Red	AlGaAs	1.85	2.4	645	660	45	95
	Ultra Green	AlInGaP	2.2	2.6	575	574	25	85

Outline drawing

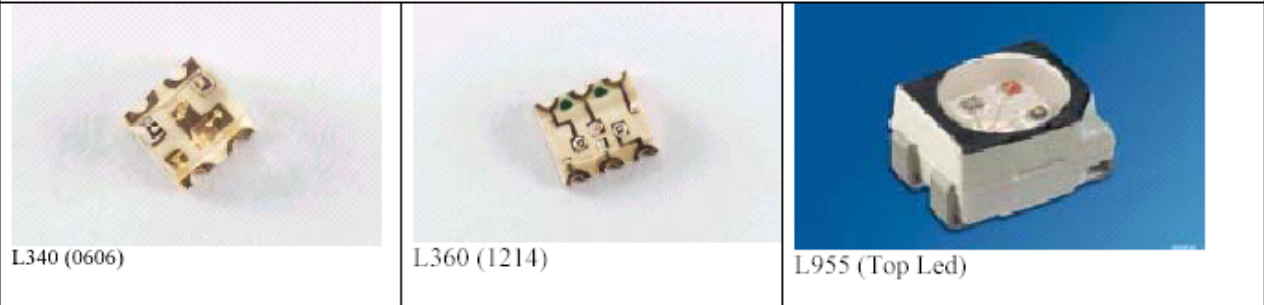


UNIT: mm TOLERANCE: ±0.25

BI-COLOR PCBoard SMD

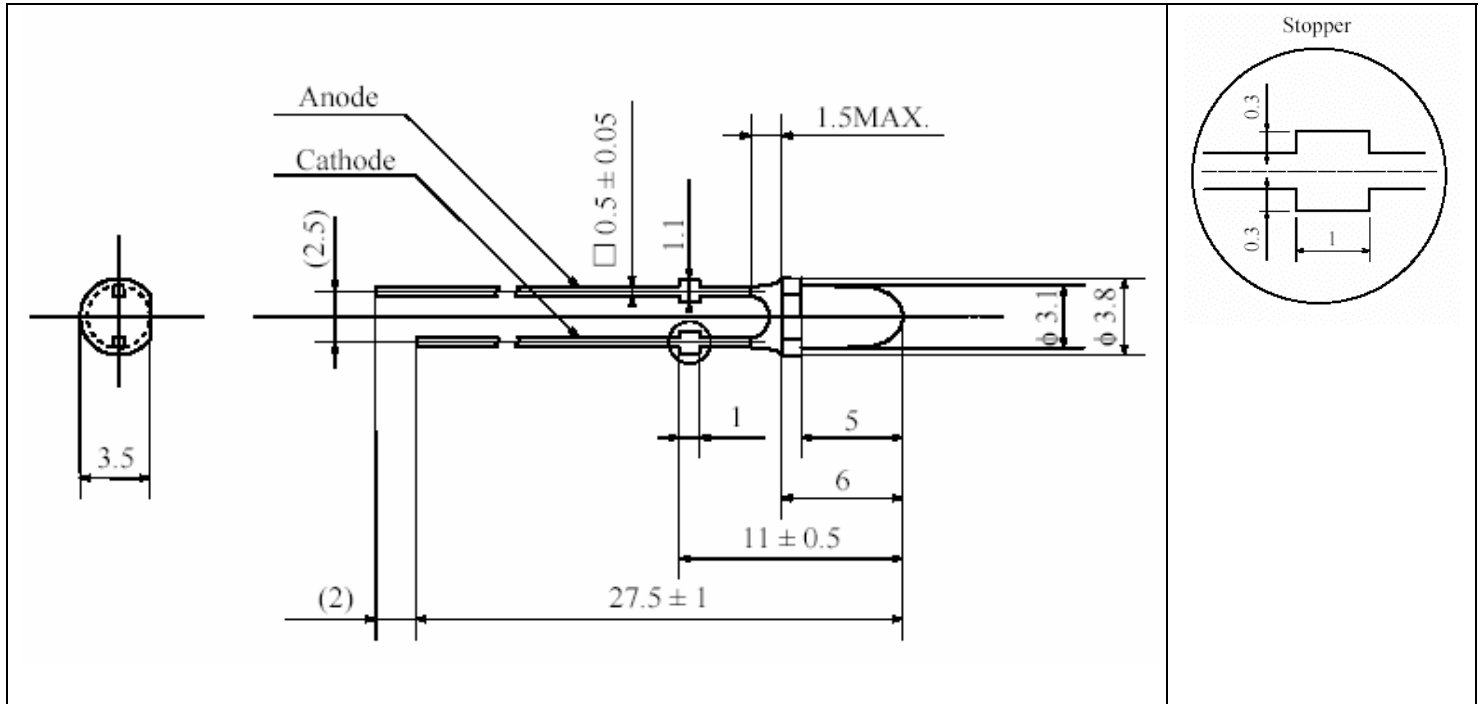
Part Number		Lighting Color	Material	Vf(V)		Wavelength λ (nm)			Iv(mcd)	Diagram
				Typ	Max	λ_D	λ_p	$\Delta\lambda$	Typ	
L125 (1104)										
L125GYC		Green	GaP	2.2	2.6	570	568	30	13	
		Yellow	GaAsP	2.1	2.5	590	589	35	13	
L125EGC		HE Red	GaAsP	2.0	2.5	620	630	45	13	
		Green	GaP	2.2	2.6	570	568	30	13	
L125EYC		HE Red	GaAsP	2.0	2.5	620	630	45	13	
		Yellow	GaAsP	2.1	2.5	590	589	35	13	
L125SRGC		Super Red	AlGaAs	1.85	2.4	645	660	45	50	
		Green	GaP	2.2	2.6	570	568	30	13	
L125SRQGC		Super Red	AlGaAs	1.85	2.4	645	660	45	50	
		Ultra Green	AllnGaP	2.2	2.6	575	574	25	70	
L145GYC		Green	GaP	2.2	2.6	570	568	30	24	
		Yellow	GaAsP	2.1	2.5	590	589	35	9	
L145EGC		HE Red	GaAsP	2.0	2.5	620	630	45	24	
		Green	GaP	2.2	2.6	570	568	30	24	
L145EYC		HE Red	GaAsP	2.0	2.5	620	630	45	24	
		Yellow	GaAsP	2.1	2.5	590	589	35	9	
L145SRGC		Super Red	AlGaAs	1.85	2.4	645	660	45	48	
		Green	GaP	2.2	2.6	570	568	30	24	
L145SRQGC		Super Red	AlGaAs	1.85	2.4	645	660	45	48	
		Ultra Green	AllnGaP	2.2	2.6	575	574	25	65	
L155GYC		Green	GaP	2.2	2.6	570	568	30	24	
		Yellow	GaAsP	2.1	2.5	590	589	35	9	
L155EGC		HE Red	GaAsP	2.0	2.5	620	630	45	24	
		Green	GaP	2.2	2.6	570	568	30	24	
L155EYC		HE Red	GaAsP	2.0	2.5	620	630	45	24	
		Yellow	GaAsP	2.1	2.5	590	589	35	9	
L155SRGC		Super Red	AlGaAs	1.85	2.4	645	660	45	48	
		Green	GaP	2.2	2.6	570	568	30	24	
L155SRQGC		Super Red	AlGaAs	1.85	2.4	645	660	45	48	
		Ultra Green	AllnGaP	2.2	2.6	575	574	25	85	
L165GYC		Green	GaP	2.2	2.6	570	568	30	24	
		Yellow	GaAsP	2.1	2.5	590	589	35	9	
L165EGC		HE Red	GaAsP	2.0	2.5	620	630	45	24	
		Green	GaP	2.2	2.6	570	568	30	24	
L165EYC		HE Red	GaAsP	2.0	2.5	620	630	45	24	
		Yellow	GaAsP	2.1	2.5	590	589	35	9	
L165SRGC		Super Red	AlGaAs	1.85	2.4	645	660	45	48	
		Green	GaP	2.2	2.6	570	568	30	24	
L165SRQGC		Super Red	AlGaAs	1.85	2.4	645	660	45	48	
		Ultra Green	AllnGaP	2.2	2.6	575	574	25	85	

FULL-COLOR SMD



Part Number	Color	Material	Vf(V)		Wavelength λ (nm)			Iv(mcd)	
			Typ	Max	λ_D	λ_p	$\Delta\lambda$	Typ	
L340QRQGMBC-A	S. Red	AllnGaP	2.4	2.6	630	650	22	100	
	Ultra Green	AllnGaP	2.2	2.6	575	574	25	65	
	S. Blue	SiC	3.7	4.0	405	400	26	26	
L360SRGBC-P	S. Red	AllnGaP	2.4	2.6	630	650	22	100	
	Green	GaP	2.2	2.6	570	568	30	24	
	Blue	SiC	3.6	4.5	455	430	25	20	
L955UELPGBC	ULTRA RED	AllnGaP	2.1	2.45	625	632	17	180	
	Ultra Green	InGaN	3.7	4.2	523	518	26	71	
	Ultra Blue	InGaN	3.7	4.2	470	468	35	285	
L955LBUEVGC	Super Blue	GaN	3.7	4.0	470	468	26	50	
	Super Red	AllnGaP	2.4	2.6	660	650	22	120	
	Super Green	AllnGaP	2.2	2.6	573	571	25	120	
L955SRGBC	Super Red	AlGaAs	1.8	2.4	670	660	20	50	
	Green	GaP	2.2	2.6	573	568	30	22	
	Blue	SiC	3.6	4.5	470	455	25	22	
L955EGBC	H. E RED	GaAsP	2.1	2.6	640	635	40	24	
	Yellow Green	GaP	2.2	2.6	570	565	30	24	
	Blue	SiC	4.0	4.7	468	430	65	10	

3 mm LED Lamps



All Dimensions are in millimeters (multiply mm by 0.0394 for inches). Dimension for general reference only and may be different for specific part numbers. Contact Lumitron for a specific part number's data sheet.

Absolute Maximum Rating: (Ta=25°C)		Electro-Optical Characteristics (Ta=25°C)		
Reverse Voltage	5 Volt	Para Meter Description	Symbol	Unit
Reverse Current (Vr=5V)	100µA	Spectral Line Half-Width	$\Delta\lambda$	nm
Operating Temperature Range	-40°C to +80°C	Power Dissipation	Pd	mW
Storage Temperature Range	-40°C to +100°C	Peak Forward Current (Duty 1/10@KHz)	If(peak)	mA
Lead Soldering Temperature	260°C for 5 seconds	Recommended Operation Current	If (Rec)	mA
		Average Luminous Intensity (If=10mA)	Iv	med

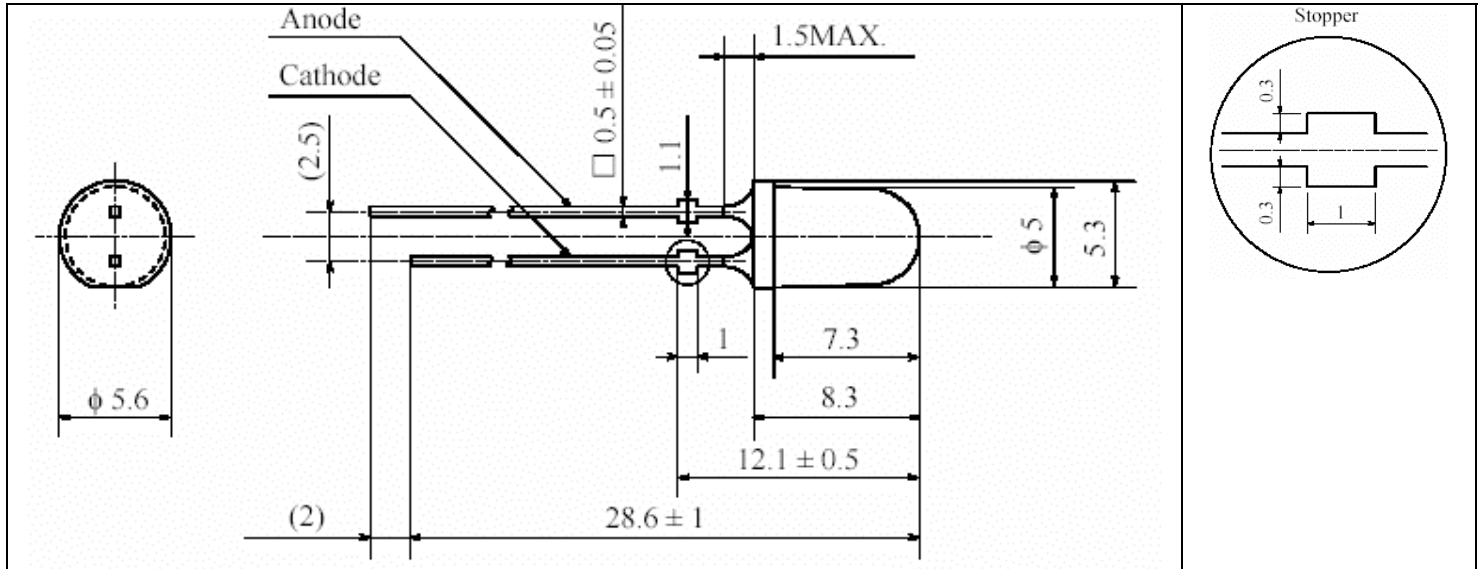
Notes:

1. Dimensions for general reference only - for specific part number dimensions please contact Lumitron for specification sheet.
2. Tolerance is +/- 0.25mm (0.10") unless otherwise specified.
3. Protruded resin under flange is 1.5mm (0.059") max.
4. Lead spacing is measured where the leads emerge from the package.
5. Specifications are subject to change without notice.

3 mm LED Lamps

Part No.	Chip		Lens Color	Wave Length (nm)	Absolute Maximum Ratings				Electro-Optical Characteristics						View Angle (deg)
	Raw Material	Emitted Color			n	Pd mW	If mA	If (Peak)	Vf(V)			If		lv (med)	
									Min.	Typ.	Max.	(Rec)	Min.		
L314WC-15DS	InGaN	White	Water Clear	x - 0.31 y - 0.32	--	84	20	100		3.6	4.0	30	3900	5520	15
L314WC-30DS	InGaN	White	Water Clear	x - 0.31 y - 0.32	--	84	20	100		3.6	4.0		2600	3700	30
L314WC-60DS	InGaN	White	Water Clear	x - 0.31 y - 0.32	--	84	20	100		3.6	4.0			1900	60
L314UBC-S	GainN	Blue	Water Clear	470	--	100	30	100		3.6	4.0			3460	15
L314UBC-30DS	GainN	Blue	Water Clear	470	--	100	30	100		3.6	4.0			1500	30
L314UBC-45DS	GainN	Blue	Water Clear	470	--	100	30	100		3.6	4.0			800	45
L314GC	Gap	Green	Water Clear	565	30	100	30	160	1.7	2.1	2.8	10~20	10	30	30
L314SGC	Gap	Green	Water Clear	565	30	100	30	160	1.7	2.1	2.8	10~20	100	180	30
L314UGC	Gap	Green	Water Clear	565	30	100	30	160	1.7	2.1	2.8	10~20	300	500	30
L314UPGC-S	GainN	Green	Water Clear	525	--	100	30	100		3.6	4.0			7800	15
L314UPGC-30DS	GainN	Green	Water Clear	525	--	100	30	100		3.6	4.0			3900	30
L314UPGC-45DS	GainN	Green	Water Clear	525	--	100	30	100		3.6	4.0			2300	45
L314HC	GaP	Bright Red	Water Clear	700	90	45	15	50	1.7	2.1	2.8	5~10	10	20	30
L314EC	GaAsP/GaP	Hi Eff. Red	Water Clear	635	45	100	30	160	1.7	2.0	2.8	10~20	20	50	30
L314SRC	GaAlAs	Super Red	Water Clear	660	20	60	20	160	1.6	1.8	2.1	10~20	150	500	30
L314LRC	GaAlAs	Super Red	Water Clear	660	20	60	20	160	1.6	1.8	2.1	10~20	500	800	30
L314URC	GaAlAs	Super Red	Water Clear	660	20	60	20	160	1.6	1.8	2.1	10~20	800	1000	30
L314TUEC	AllnGaP	O. Red	Water Clear	630	15	120	40	200	1.7	2.0	2.4	10~20	800	1100	30
L314TURC	GaAlAs	Super Red	Water Clear	660	20	60	20	160	1.6	1.8	2.1	10~20	1000	1250	30
L314YC	GaAsP/GaP	Yellow	Water Clear	585	30	100	30	100	1.7	2.1	2.8	10~20	10	30	30
L314YC	GaAsP/GaP	Yellow	Water Clear	585	30	100	30	100	1.7	2.1	2.8	10~20	100	300	30
L314TUYC	AllnGaP	O. Red	Water Clear	592	15	120	40	200	1.7	2.1	2.4	10~20	1000	1500	30

5 mm LED Lamps



All Dimensions are in millimeters (multiply mm by 0.0394 for inches). Dimension for general reference only and may be different for specific part numbers. Contact Lumitron for a specific part number's data sheet.

Absolute Maximum Rating: (Ta=25°C)		Electro-Optical Characteristics (Ta=25°C)		
Reverse Voltage	5 Volt	Para Meter Description	Symbol	Unit
Reverse Current (Vr=5V)	100 μ A	Spectral Line Half-Width	$\Delta\lambda$	nm
Operating Temperature Range	-40°C to +80°C	Power Dissipation	Pd	mW
Storage Temperature Range	-40°C to +100°C	Peak Forward Current (Duty 1/10@KHz)	If(peak)	mA
Lead Soldering Temperature	260°C for 5 seconds	Recommended Operation Current	If (Rec)	mA
		Average Luminous Intensity (If=10mA)	Iv	med

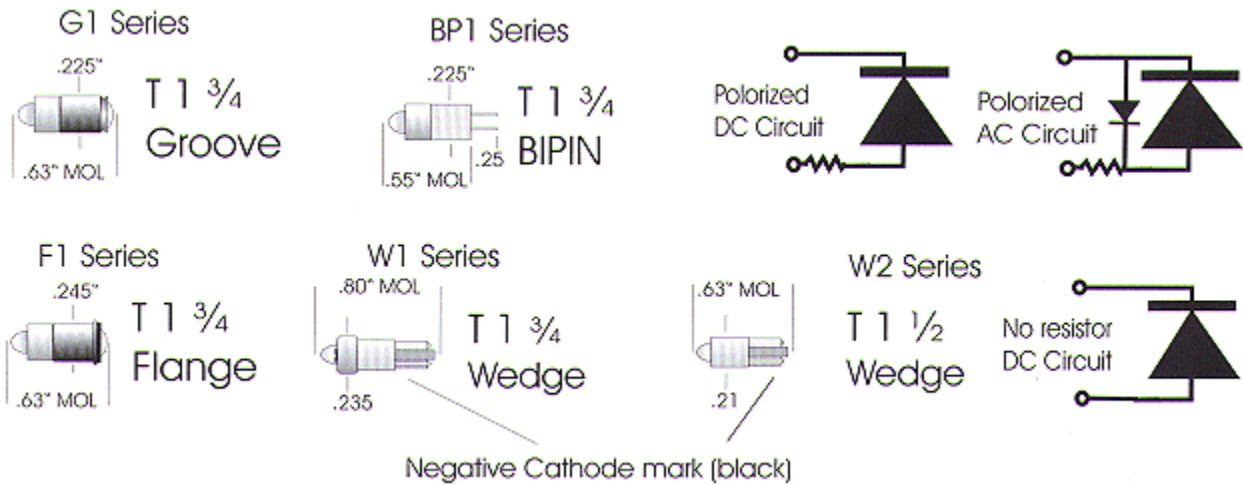
Notes:

- Dimensions for general reference only - for specific part number dimensions please contact Lumitron for specification sheet.
- Tolerance is +/- 0.25mm (0.10") unless otherwise specified.
- Protruded resin under flange is 1.5mm (0.059") max.
- Lead spacing is measured where the leads emerge from the package.
- Specifications are subject to change without notice.

5 mm LED Lamps

Part No.	Chip		Lens Color	Wave Length (nm)	Absolute Maximum Ratings				Electro-Optical Characteristics					View Angle (deg)	
	Raw Material	Emitted Color			n	Pd mW	If mA	If (Peak)	Vf(V)			If (med)			
									Min	Typ	Max		(Rec)		Min.
L513NWC-15D	GaN	White	Water Clear	x - 0.31 y - 0.32	--	120	30	100		3.5	4.0	20	6500	9200	15
L-513WC-20DS	GaN	White	Water Clear	x - 0.29 y - 0.30	--	100	25	80		3.6	4.0	20		6400	20
L513NWC-30D	GaN	White	Water Clear	x - 0.31 y - 0.32	--	120	30	100		3.5	4.0	20	3500	5920	30
L-513WC-50DS	GaN	White	Water Clear	x - 0.29 y - 0.30	--	100	25	80		3.6	4.0	20		1800	50
L-515BS-70	GaN	Diff. White	White Clear	x - 0.31 y - 0.32	--	120	30	100		3.6	4.0	20	580	590	70
L513UBC-S	GaN	Blue	Water Clear	470	--	100	30	100		3.6	4.0	20		3400	15
L513UBC-30DS	GaN	Blue	Water Clear	470	--	100	30	100		3.6	4.0	20		1500	30
L513UBC-45S	GaN	Blue	Water Clear	470	--	100	30	100		3.6	4.0	20		800	45
L513UPGC-S	GaN	Green	Water Clear	525		100	30	100		3.5	4.0	20		11000	15
L513UPGC-30DS	GaN	Green	Water Clear	525		100	30	100		3.5	4.0	20		5000	30
L513UPGC-45S	GaN	Green	Water Clear	525		100	30	100		3.5	4.0	20		2760	45
L-513IC	GaAlAs	Hi. Eff Red	Water Clear	625	20	60	20	160	1.6	1.8	2.1	10~20	60	300	30
L-513SRC	GaAlAs	Super Red	Water Clear	660	20	60	20	160	1.6	1.8	2.1	10~20	300	1000	30
L-513LRC	GaAlAs	Super Red	Water Clear	660	20	60	20	160	1.6	1.8	2.1	10~20	1000	2000	30
L-513URC	GaAlAs	Super Red	Water Clear	660	20	60	20	160	1.6	1.8	2.1	10~20	2000	3000	30
L-513MEC-36D	GaAlAs	Orange Red	Water Clear	660	20	120	40	200	1.7	2.0	2.6	20	2500	4000	36
L-513MEC-24D	GaAlAs	Orange Red	Water Clear	660	20	120	40	200	1.7	2.0	2.6	20	3000	4800	24
L-513MEC-12D	GaAlAs	Orange Red	Water Clear	660	20	120	40	200	1.7	2.0	2.6	20	5000	8750	12
L-513LYC	GaAsP/ GaP	Yellow	Water Clear	585	30	100	30	160	1.7	2.1	2.8	10~20	100	250	30
L-513MYC-36D	AlGaInP	Yellow	Water Clear	590	20	120	40	200	1.7	2.0	2.6	20	2500	3700	36
L-513MEC-24D	AlGaInP	Yellow	Water Clear	590	20	120	40	200	1.7	2.0	2.6	20	3000	4300	24
L-513MEC-12D	AlGaInP	Yellow	Water Clear	590	20	120	40	200	1.7	2.0	2.6	20	5000	8250	12
L513SUVC	InGaN	Ultra Violet	Water Clear	395	30		30	100		3.7	4.2	20		20 mW	30

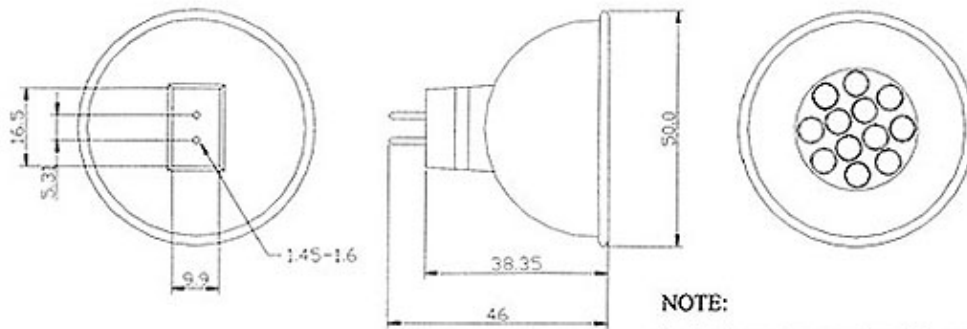
Single Chip Based LED Lamps



T1 3/4 Series (5mm)				
High brightness Low cost 90' viewing Angles	TYPICAL LED SPECIFICATIONS WITHIN 60' TO 90' VIEWING ANGLES			
	LED COLOR	If mcd@ 20mA	if TYPICAL	WAVELENGHT
	RED	600	18mA	636nm
	ORANGE	360	18mA	605nm
	YELLOW	360	18mA	592nm
	P. GREEN	2400	14mA	525nm
	BLUE	800	14mA	470nm
	WHITE	1500	14mA	425-625nm

Part Number Key;				
Series number	Voltage / Current	Color	Circuit	Polarity
F1	002 / ext. resistor	R	AC	AC
G1	006 / above	O	DC	DC-
BP1	012 / above	Y		DC+
W1	024 / 10 ma	G		
W2	028 / 10 ma	PG		

Substitute 'G', 'BP' or 'W' for 'F' in above part numbers to get the miniature groove, bipin, or wedge base.

L-125W3C-12V-MR16 Multi LED LAMP**PACKAGE DIMENSIONS:****NOTE:**

1. All dimensions are in millimeter.
2. Bulb base MR-16
3. All tolerance are ± 0.25 mm

FEATURES:

- SUPER LUMINOSITY WHITE LED (InGaN) .
- WATER CLEAR PACKAGE
- 5mm ALL RESIN MOLD
- BASE MODEL MR-16
- AC DC BI-POLAR

MATERIALS:

- LED LENS: UV RESISTENT EPOXY

ABSOLUTE MAXIMUM RATING: Ta = 25

- 0PEAK OPERATE VOLTAGE14 V
- OPERATING TEMPERATURE25 TO 0850
- STORAGE TEMPERATURE35 TO 01000
- LED BULB LIFE20000 HOURS

(LUMINANCE REDUCES to 50%)

TWELVE LED LAMP

Description:

These twelve LED Lamps are specifically designed for architectural high efficiency LED lighting, accent lighting, and display lighting. The 5mm round shaped radiation pattern (20°) power high luminous intensity ensure that these devices are excellent for wide field of view applications where a wide viewing angle and readability in sunlight are essential. High Efficiency LED materials are used in this Bulb. Every lamp is made with an advanced optical grade epoxy offering superior high shock and high temperature resistance in outdoor applications.

Features:

- Wide view angle
- High luminous output
- Seven Color Ranks
- Solid-state Vibration resistant
- Saving Power
- Long life

Options:

- 6V to 240V AC or DC
- Other industry standard bases

Part No.: L-125W3C-12V-MR16 Multi Lamp LED Bulb

ABSOLUTE OPTICAL CHARACTERISTIC $T_a = 25^\circ\text{C}$

PARAMETER		SYMBOL	MIN	TYP	MAX	UNIT
Operate Voltage		V	-----	12	14	V
Luminous Intensity	$I_F = 80\text{ mA}$	I v		72		cd
Dominant Wavelength	$I_F = 80\text{ mA}$	λ_d		-	-----	nm
Spectrum Radiation Bandwidth	$I_F = 80\text{ mA}$	$\Delta\lambda$	-----	-	-----	nm
Forward Current	$V_{IN} = 12\text{ V}$	I_F	-----	80	-----	mA
Each LED Viewing Angle		201/2	-----	18	-----	deg

COLOR RANKS:**A-Rank (Approximate Color Temperature: 6,500-10,000K)**

	Rank A			
X	0.280	0.264	0.283	0.296
Y	0.248	0.267	0.305	0.276

B-Rank (Approximate Color Temperature: 5,500-6,500K)

	Rank B1			
X	0.287	0.283	0.330	0.330
Y	0.295	0.305	0.360	0.339

	Rank B2			
X	0.296	0.287	0.330	0.330
Y	0.276	0.295	0.339	0.318

C-Rank (Approximate Color Temperature: 4,500-5,500K)

	Rank C			
X	0.330	0.330	0.361	0.356
Y	0.318	0.360	0.385	0.351

D-Rank (Approximate Color Temperature: 2,800-3,200K)

	Rank D			
X	0.440	0.440	0.500	0.500
Y	0.400	0.500	0.500	0.400

Notes:

1. All Dimensions are in millimeters (inches).
2. Tolerance is +/- 0.25mm (0.10") unless otherwise specified.
3. Protruded resin under flange is 1.5mm (0.059") max.

4. Lead spacing is measured where the leads emerge from the package.
5. Specifications are subject to change without notice.

Application Notes

Reliable and energy efficient solid state Light Emitting Diodes (LEDs) have evolved to the point where they are now an attractive choice for many applications that were once the domain of incandescent lamps. These include indication, backlighting pushbuttons, panel overlays, liquid crystal displays (LCD's), and most recently, general illumination.

Since there are no moving parts, LEDs are very reliable under shock and vibration conditions. And unlike incandescent lamps, there is no surge current when energized. They don't have a filament that will burn out, and they don't get especially hot. They are also energy efficient and have a very long operating life. The current range they generally operate in is between 1 mA and 30 mA. One hundred thousand hours of operating life or more (sometimes much more) is not unusual for an LED.

Wave Length: LEDs have a relatively limited light output in specific narrow bandwidth colors. This is good if you want a specific color, but, potentially problematic for wide spectrum light (white) for general illumination. Recently however, many applications have had successful results using ultra bright "white" LEDs for general illumination. They generally have a blue tint, which is often desirable in certain applications, but they are missing some wavelengths and won't work in every application. However, Booted LEDs for blue-white lighting can compensate for this in some applications.

Viewing Angle: LEDs are also narrow-angle emitters, and this can cause problems when they are being used as direct replacements for incandescent lamps. They don't have the same illumination physics, and this should be considered when designing or retrofitting. LEDs emit light in a forward cone, often quite narrow, usually specified in view angle, such as 30°, 120° and so on. They achieve high intensity by reducing the angle through which they emit, and they have virtually no 90° off-axis light. Surface mount device (SMD) type LEDs tend to give the widest viewing angles of illumination, and forward angles of up to 150° exist for some highly diffused SMD LEDs.

Luminous Intensity: The output of LEDs is usually expressed in millicandela (MCD). The candela is defined as the number of lumens per steradian of solid angle. It is typically measured along the projection axis and gives the perceived response to the emitted light at a defined current level.

Forward Voltage: The brightness of an LED is a function of forward current, or the operating voltage at a specified current. The typical rating is the forward voltage at which the device will light. LEDs should not be subjected to forward voltage exceeding the maximum rating. Some applications require a resistor in series with the LED to assure that this voltage is not exceeded.

Reverse Voltage: Since an LED is a diode, with anode and cathode connections, polarity is critical. If the voltage is applied in the reverse direction exceeding the Reverse Voltage rating (typically five volts), damage to the LED is possible.

DC Forward Current: The defined current level at which the ratings of the LED are measured.

Peak Forward Current: The maximum operating current under pulse conditions (1/10 duty cycle @ 1kHz).

Operating Temperature: Optical and electrical ratings are at 25°C. Please note that LEDs exhibit a fairly straight-line change in intensity versus temperature. They are brighter when cold, dimmer when hot. The normal operating range for most LEDs is -20° to + 80°C. Storage temperature is -30° to + 100°C.

Ordering Information

To place an order:

Call: 908-508-9100 Extension 111

Hours: 8:30 a.m. - 5:00 p.m. EST Monday - Friday

Fax: 908-273-0853 **E-Mail:** sales@lumitroncorp.com

Mail: Lumitron Customer Service Department, P.O. Box 267, Summit, NJ 07902-0267

For prompt, accurate service when ordering, please provide the following information:

- Part Number, quantity, purchase order number
- Billing and shipping instructions (including any special instructions).
- Name and title of the person placing the order

PRICES AND TERMS

Prices and specifications are subject to change without notice. To confirm prices, please submit a Request For Quote (RFQ) by phone, fax, or e-mail. Payment terms are net 30 days, F.O.B. Berkeley Heights, NJ.

We accept MasterCard, VISA, or American Express.

SHIPPING

We fulfill most in-stock orders the same day we receive your purchase order. If shipping instructions are not provided, we will use the lowest cost shipping method, usually UPS Ground.

INTERNATIONAL ORDERS

Lumitron Corporation ships merchandise worldwide. Orders must be prepaid in American dollars, including freight, prior to shipping. We accept Wire Transfers, MasterCard, VISA, or American Express. Orders over \$1,000 may require Letter of Credit and partial payment prior to shipping.

RETURN POLICY

1. Please call 908-273-8998 Extension 112 to request a Return Authorization (RA) number. To issue you an RA number, the customer service representative will need your order reference number or invoice number. Please have that number available when you call.
2. Include a copy of your invoice or packing list inside the package, and any documentation of noncompliance.

3. Make sure you put your RA number on the mailing label on the outside of the shipping carton.
4. Address your shipment to the following: Lumitron Customer Service Department, 10 Summit Avenue, Berkeley Heights, NJ 07922.