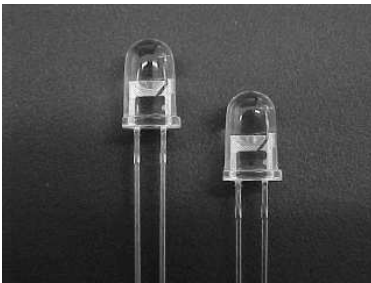




Data Sheet

Lx546DMY, Lx346DMY

MediaVista™ High Brightness LED Lamps
5 mm and 4 mm Super Oval
Red, Green and Blue



Description:

CAO MediaVista™ high brightness LED lamps are specially designed for outdoor signal and sign applications. Its precise optical design produces a high bright light source and well defined spatial radiation patterns. The lens was made with an advanced optical grade epoxy to produce superior high temperature and high moisture resistant performance in outdoor environments. It also contains UV inhibitors to reduce the effects of long term exposure to direct sunlight.

These LED lamps are color diffused and use a 5 mm and 4 mm super oval package. The chips of these LEDs are applied to the most up-to-date material technology to produce the most efficient light output and highest junction temperature limit, which enable it to operate under bright sunlight and other high temperature environment.



Features:

- **Standard 5 mm and 4 mm super oval package**
- **Precise optical performance**
- **Color diffused lens**
- **Superior performance in outdoor environment**
 - UV resistant epoxy
 - Superior resistance to moisture
- **Outstanding LED material efficiency**
 - High luminous output
 - Low electrical power consumption
- **Standoff leads**
- **View Angles: 110°/50° parallel**
- **Colors:**
 - Red 625 nm
 - Green 525 nm
 - Blue 470 nm
- **Choice of packaging options:**
 - Bulk
 - Ammo pack
 - Tape and reel

Applications:

- **Outdoor message boards**
- **Dynamic message signs**
- **Commercial message centers**

CAUTION: LED lamps are ESD sensitive electronic devices. Please observe appropriate precautions during handling and processing. Refer to CAO Application Notes for additional details.

Device Selection Guide

Part Number	Typical View Angle $2\theta_{1/2}$	Color and Dominant Wavelength	Intensity Range at 20 mA (mcd)		Stand-off	Package Drawing
			Min.	Max.		
LR546DMY-BDHJT5T6B0	110°/40°	Red 625 nm	750	1300	Yes	A
LG546DMY-GMLMG6G7BC	110°/40°	Green 525 nm	1700	2800	Yes	A
LB546DMY-GMFGB2B3BC	110°/40°	Blue 470 nm	450	750	Yes	A
LR346DMY-BDGHT5T6B0	110°/55°	Red 625 nm	580	980	Yes	B
LG346DMY-GMCLG6G7BC	110°/55°	Green 525 nm	1300	2200	Yes	B
LB346DMY-GMEGB2B3BC	110°/55°	Blue 470 nm	340	750	Yes	B

Notes:

1. Tolerance of intensity limits is $\pm 15\%$.
2. Tolerance of typical view angle $2\theta_{1/2}$ is $\pm 5^\circ$, measured at $I_V(\theta_{1/2})=50\%I_V(0)$.

Part Numbering System

L	R	5	4	6	D	M	Y	-	B	D	H	J	T	5	T	6	B	0
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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

Special Requirements

- 0: No special requirements
- C: Copper alloy lead frame

Mechanical Options

- A: Ammo pack
- B: Bulk
- T: Tape and reel

Maximum Color Bin

Minimum Color Bin

Maximum Intensity Bin

Minimum Intensity Bin

Maximum Forward Voltage Bin

Minimum Forward Voltage Bin

Series Code

Typical View Angle

- M: 110°/50°

Lens and Standoff Options

- D: Color diffused, with standoff

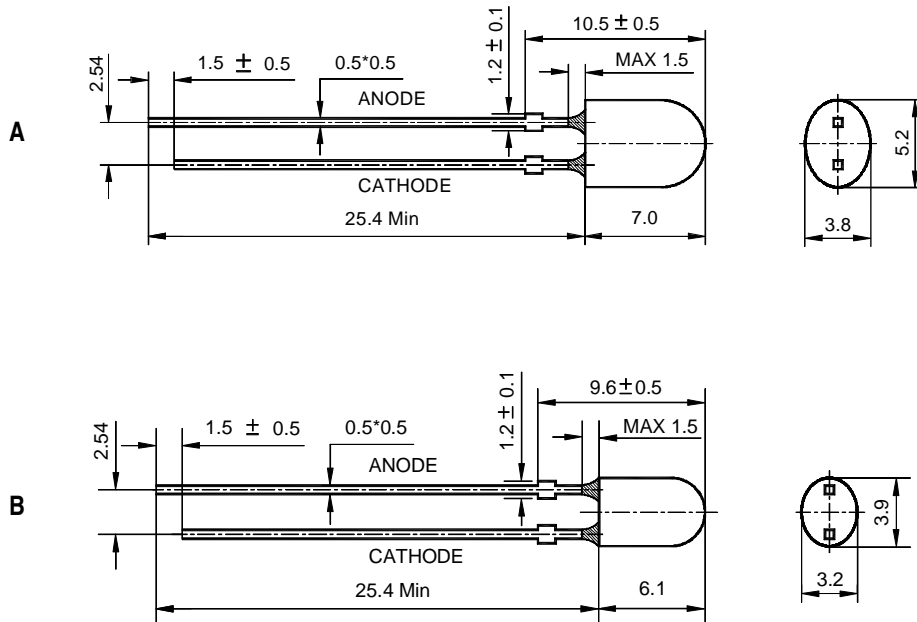
LED Package Type

- 546: 5 mm Super Oval
- 346: 4 mm Super Oval

Emitting Color

- R: Red 625 nm
- G: Green 525 nm
- B: Blue 470 nm

Package Dimensions



Notes :

1. All dimensions are in millimeters.
2. Tolerance is ± 0.2 mm unless otherwise noted.
3. Leads are mild steel or copper alloy, solder dipped.
4. Tapers shown at top of leads (bottom of lamp package) indicate an epoxy meniscus that may extend about 1.5 mm down the lead.

Absolute Maximum Rating at $T_A = 25^\circ\text{C}$

Parameters	Red	Blue and Green
Power Dissipation	80 mW	100 mW
Forward Current	30 mA	30 mA
Pulse Forward Current ^[1]	100 mA	100 mA
Reverse Voltage	8 V	5 V
Operating Temperature Range	-40 °C to +100 °C	-30 °C to +85 °C
Storage Temperature Range	-40 °C to +100 °C	-40 °C to +100 °C
Lead Soldering Temperature ^[2]	260 °C for 5 Seconds	260 °C for 5 Seconds

Notes:

1. Pulse forward current condition: 1/10 duty cycle, 0.1ms pulse width.
2. Soldering condition: 3 mm below body.

Electrical / Optical Characteristics $T_A = 25^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Units	Test Condition
Forward Voltage						
Red	V_F	1.8	2.2	2.4	V	$I_F=20\text{ mA}$
Blue and Green		2.8	3.4	4.0		
Reverse Current						
Red	I_R			2	μA	$V_R=5\text{ V}$
Blue and Green				50		
Dominant Wavelength ^[1]						
Red	λ_D	620	625	630	nm	$I_F=20\text{ mA}$
Green		520	525	535		
Blue		465	470	475		
View Angle						
Lx546xxx	$2\theta_{1/2}^{[2]}$		110/40		Deg.	$I_F=20\text{ mA}$
Lx346xxx			110/50			
Luminous Intensity						
LR546DMY	I_v	750	1200	1300	mcd	$I_F=20\text{ mA}$
LG546DMY		1700	2300	2800		
LB546DMY		450	650	750		
LR346DMY		580	850	980		
LG346DMY		1300	1800	2200		
LB346DMY		340	500	750		

Notes:

1. The dominant wavelength λ_D is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.
2. $\theta_{1/2}$ is the off-axis angle at which luminous intensity is half of the axial luminous intensity, i.e. $I_v(\theta_{1/2})=I_v(0)$.
3. Tolerance of typical view angle $2\theta_{1/2}$ is $\pm 5^\circ$.

Typical Electrical / Optical Characteristic Curves $T_A = 25^\circ\text{C}$

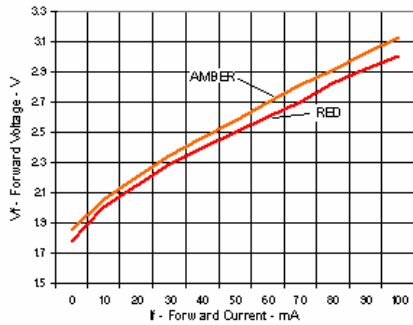


Figure 1-a: Forward Current vs. Forward Voltage – Red and Amber

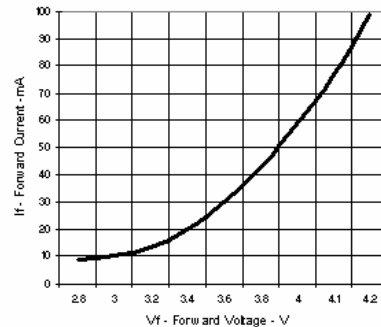


Figure 1-b: Forward Current vs. Forward Voltage – Blue and Green

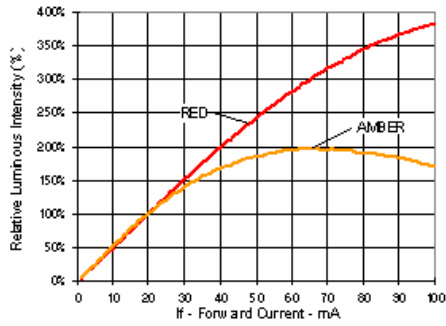


Figure 2-a: Relative Intensity vs. Forward Current – Red and Amber

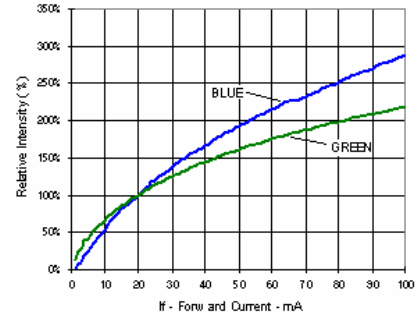


Figure 2-b: Relative Intensity vs. Forward Current – Blue and Green

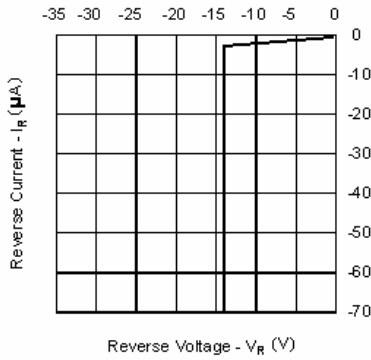


Figure 3-a: Reverse Voltage vs. Reverse Current – Red and Amber

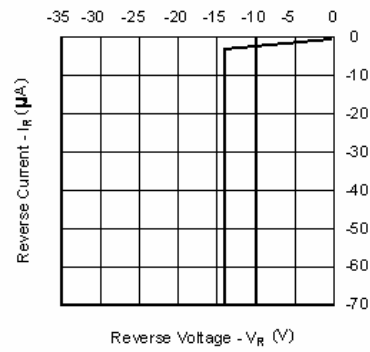


Figure 3-b: Reverse Voltage vs. Reverse Current – Blue and Green

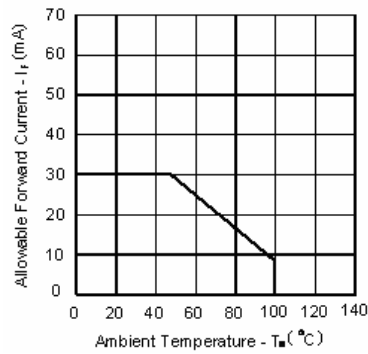


Figure 4-a: Maximum Allowable Forward Current vs. Ambient Temperature – Red and Amber

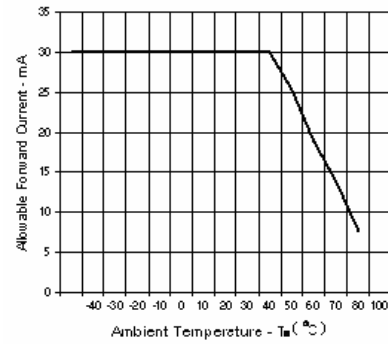


Figure 4-b: Maximum Allowable Forward Current vs. Ambient Temperature – Blue and Green

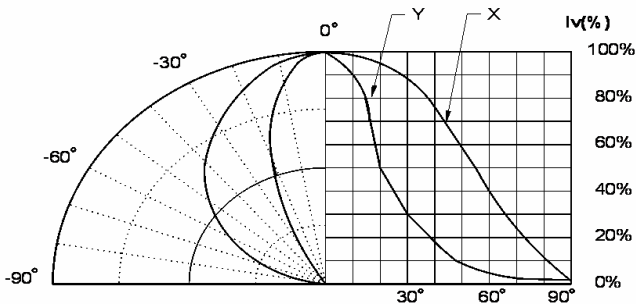


Figure 5-a: Spatial Radiation Pattern - 110°/40°

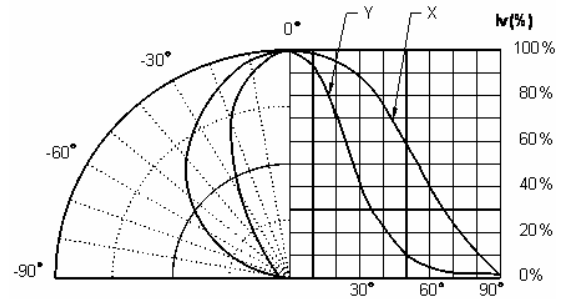


Figure 5-b: Spatial Radiation Pattern - 110°/55°

Color Bin Limits

Red		
Color Range (nm)		
Bin Code	Min.	Max.
T4	615.0	620.0
T5	620.0	625.0
T6	625.0	630.0
T7	630.0	635.0
T8	635.0	640.0

Tolerance for each bin limit is ± 0.5 nm.

Amber		
Color Range (nm)		
Bin Code	Min.	Max.
Y3	584.0	586.0
Y4	586.0	588.0
Y5	588.0	590.0
Y6	590.0	592.0
Y7	592.0	594.0
Y8	594.0	596.0

Tolerance for each bin limit is ± 0.5 nm.

Green		
Color Range (nm)		
Bin Code	Min.	Max.
G6	520.0	525.0
G7	525.0	530.0
G8	530.0	535.0

Tolerance for each bin limit is ± 0.5 nm.

Blue		
Color Range (nm)		
Bin Code	Min.	Max.
B1	460.0	465.0
B2	465.0	470.0
B3	470.0	475.0
B4	475.0	480.0

Tolerance for each bin limit is ± 0.5 nm.

Intensity Bin Limits (mcd)

Bin Code	Min.	Max.
D	260	340
E	340	450
F	450	580
G	580	750
H	750	980
J	980	1300
K	1300	1700
L	1700	2200
M	2200	2800
N	2800	3600

Tolerance for each intensity bin limit is $\pm 5\%$.

Forward Voltage Bin Limits (V)

Bin Code	Min.	Max.
A	1.6	1.8
B	1.8	2.0
C	2.0	2.2
D	2.2	2.4
E	2.4	2.6
F	2.6	2.8
G	2.8	3.0
H	3.0	3.2
J	3.2	3.4
K	3.4	3.6
L	3.6	3.8
M	3.8	4.0

Tolerance for each bin limit is ± 0.1 V.

Notes:

1. All bin categories are established for classification of products. For availability of specific bin categories, please contact your CAO sales representatives for further information.

www.caogroup.com

For product information and a complete list of sales representative, please go to our website.

For technical assistance call:

US/Canada: +1 (877) 877-9778 or (801) 256-9282

Data subject to change.

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