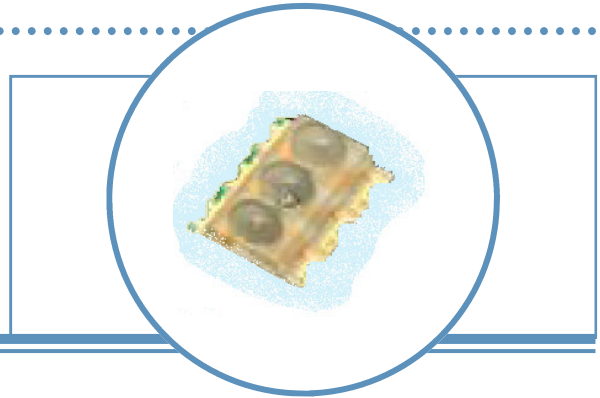


Full-Color Top-View Chip LED (3.5 x 3.0 x 1.55 lens type)

OVSTRGBLC6

- Red/green/blue/white in single surface mount package
- 8 mm tape on 7" reel compatible with automatic placement equipment
- Each chip individually addressable to provide color on-demand
- ESD protected [± 1 kV, 1 time (200 pF 0 W)]

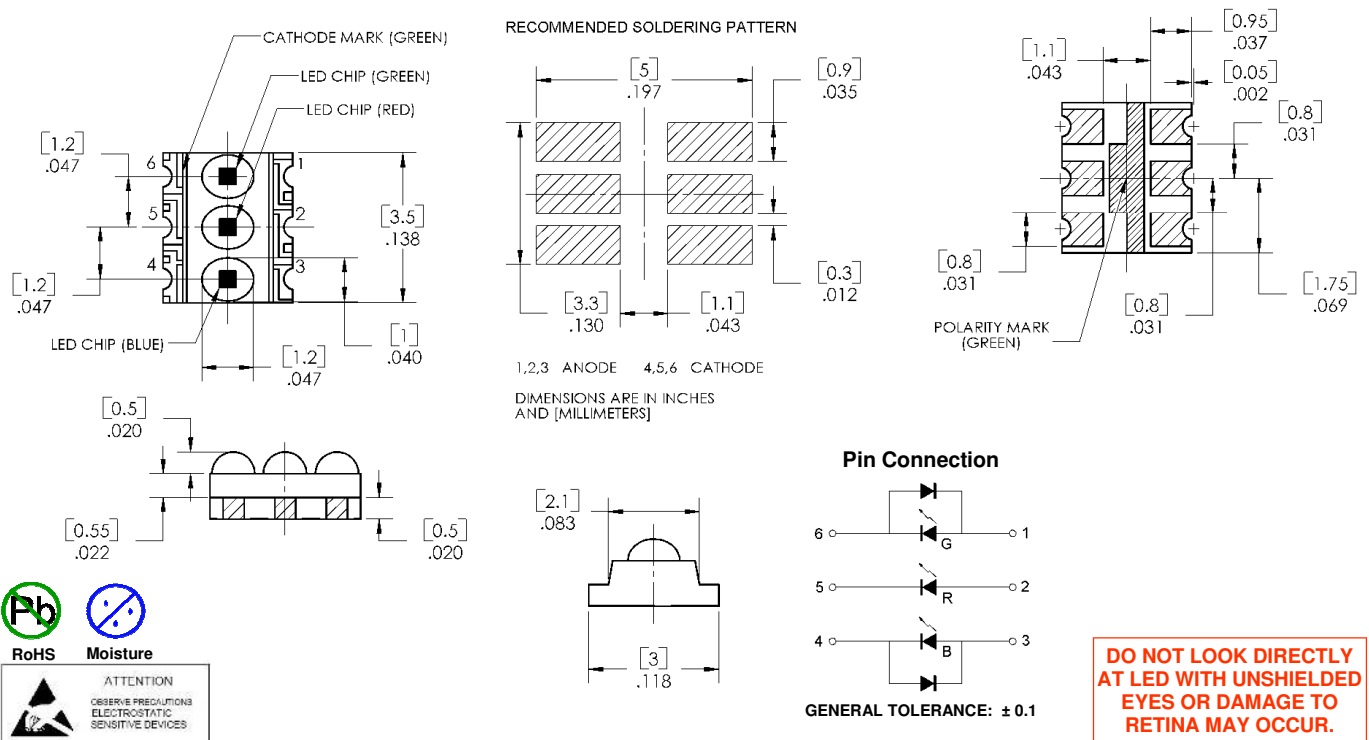


The **OVSTRGBLC6** is a full-color chip LED with multiple viewing angles and the ability to produce all colors of the visible spectrum, plus white. This small package, combined with high-light output, is ideal for miniature applications.

Applications

- Automotive (backlighting in dashboard and switches)
- Telecommunications (indicator and backlighting in telephone and fax)
- Flat backlight (LCDs, membrane switches and symbols)
- Personal/portable appliances (mobile phones, pagers, audio/video players and GPS)

Part Number	Material	Emitted Color	Intensity Typ. mcd	Lens Color
OVSTRGBLC6	AllInGaP / InGaN	Red/Green/Blue	180/550/152	Water Clear



OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

Full-Color Top-View Chip LED

OVSTRGBLC6



Absolute Maximum Ratings

SYMBOL	PARAMETER	VALUE			UNIT
		RED	GREEN	BLUE	
P_D	Power Dissipation (1 chip on)	68	98	98	mW
I_F	DC Forward Current (1 chip on)	25	25	25	mA
P_D	Power Dissipation (2 or 3 chips on)	22	33	33	mW
I_F	DC Forward Current (2 or 3 chips on)	10	10	10	mA
I_{FP}	Pulsed Forward Current ¹	100	100	100	mA
ΔI_P	DC Forward Current Reduction ² (1 chip on)	-0.425			mA / °C
	DC Forward Current Reduction ² (2 or 3 chips on)	-0.1			
T_{OPR}	Operating Temperature	-30 ~ +80			°C
T_{STG}	Storage Temperature	-40 ~ +100			°C

Note:

- Duty \leq 5%, Pulse Width \leq 1 msec.
- $T_{OPR} = 40 \sim 80^\circ\text{C}$. Use under this condition.

Electrical Characteristics

RED						
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS
I_V	Luminous Intensity (axial direction)	62	180	461	mcd	$I_F = 20\text{ mA}$
V_F	Forward Voltage	----	1.9	2.4	V	$I_F = 20\text{ mA}$
I_R	Reverse Current	----	----	100	mA	$V_R = 5\text{ V}$
λ_D	Dominant Wavelength	621	----	631	nm	$I_F = 20\text{ mA}$
$\lambda\Delta$	Spectral Line Half Width	----	15	----	nm	$I_F = 20\text{ mA}$

Electrical Characteristics

GREEN						
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS
I_V	Luminous Intensity (axial direction)	234	550	1334	mcd	$I_F = 20\text{ mA}$
V_{F1}	Forward Voltage	----	3.3	3.9	V	$I_F = 20\text{ mA}$
V_{F2}	Forward Voltage	2.0	----	----	V	$I_F = 5\ \mu\text{A}$
λ_D	Dominant Wavelength	520	----	540	nm	$I_F = 20\text{ mA}$
$\lambda\Delta$	Spectral Line Half Width	----	35	----	nm	$I_F = 20\text{ mA}$

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Full-Color Top-View Chip LED

OVSTRGBLC6

Electrical Characteristics

BLUE						
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS
I_V	Luminous Intensity (axial direction)	70	152	364	mcd	$I_F = 20 \text{ mA}$
V_{F1}	Forward Voltage	----	3.4	3.9	V	$I_F = 20 \text{ mA}$
V_{F2}	Forward Voltage	2.0	----	----	V	$I_F = 5 \mu\text{A}$
λ_D	Dominant Wavelength	460	----	480	nm	$I_F = 20 \text{ mA}$
$\lambda\Delta$	Spectral Line Half Width	----	25	----	nm	$I_F = 20 \text{ mA}$

Ranking

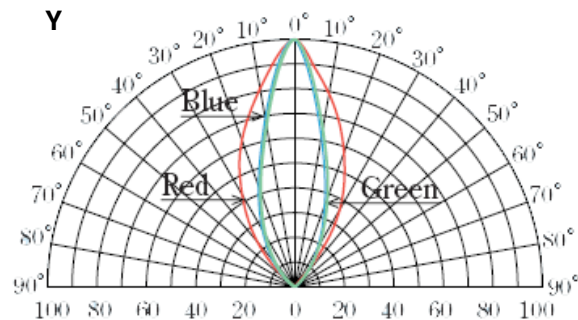
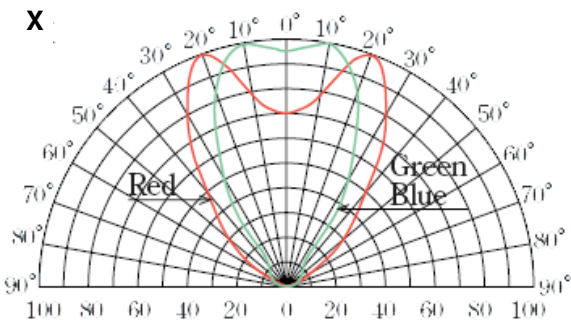
$I_F = 20 \text{ mA}$

LUMINOUS INTENSITY (mcd)			
RANK	RED	GREEN	BLUE
J	62 ~ 180	234 ~ 550	70 ~ 152
K			152 ~ 364
L		550 ~ 1334	70 ~ 152
M			152 ~ 364
N	180 ~ 461	234 ~ 550	70 ~ 152
P			152 ~ 364
Q		550 ~ 1334	70 ~ 152
R			152 ~ 364

Note:

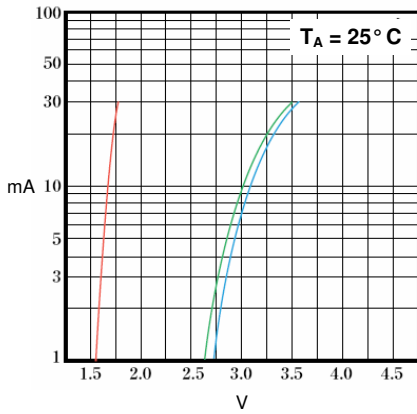
1. Please contact Optek for designation of Luminous Intensity Ranks.
2. Please state Part Number OVSTRGBLC6 when making an inquiry.

Radiation Patterns

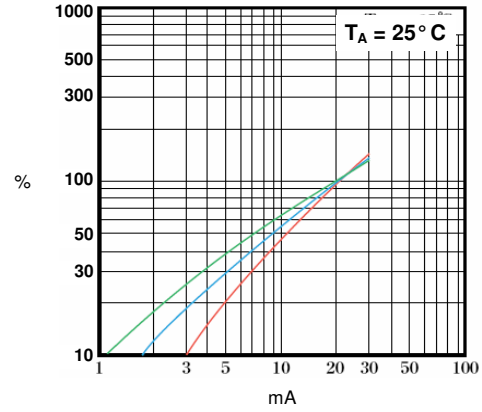


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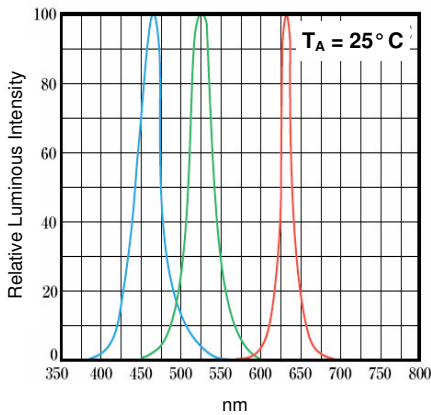
Typical Electro-Optical Characteristics Curves



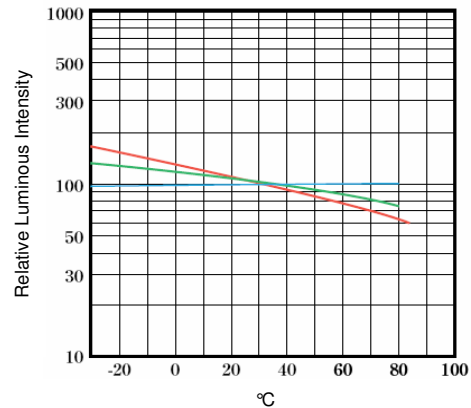
Forward Current vs Forward Voltage



Relative Luminous Intensity vs Forward Current



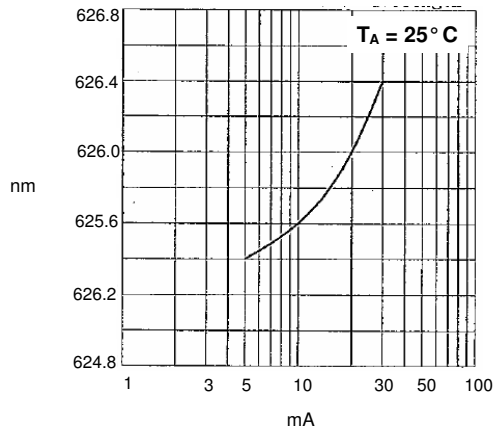
Relative Luminous Intensity vs Wavelength



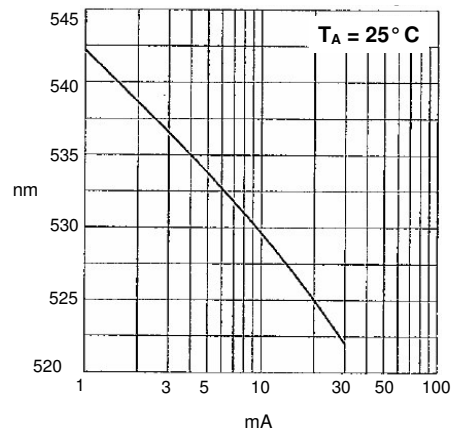
Relative Luminous Intensity vs Ambient Temperature

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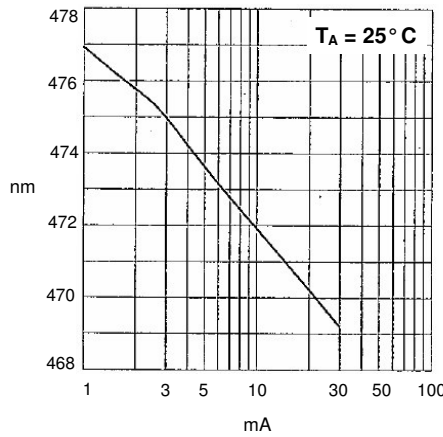
Typical Electro-Optical Characteristics Curves



Red: Forward Current vs Dominant Wavelength



Green: Forward Current vs Dominant Wavelength



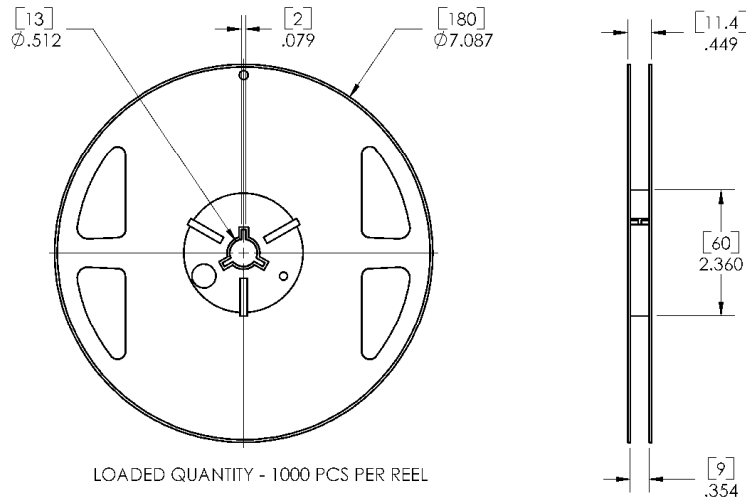
Blue: Forward Current vs Dominant Wavelength

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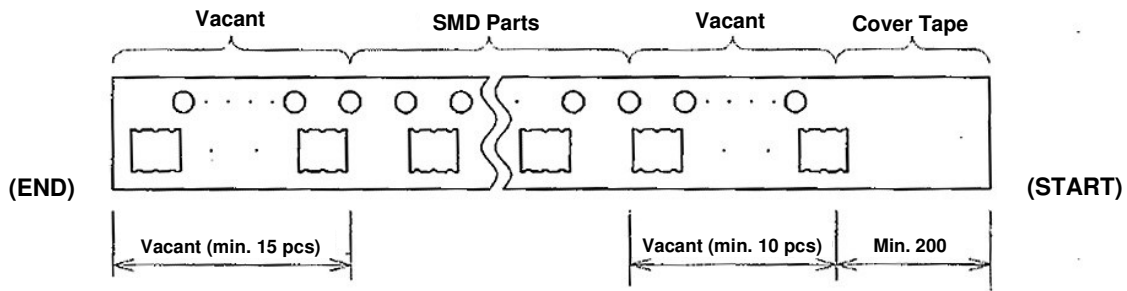
Full-Color Top-View Chip LED

OVSTRGBLC6

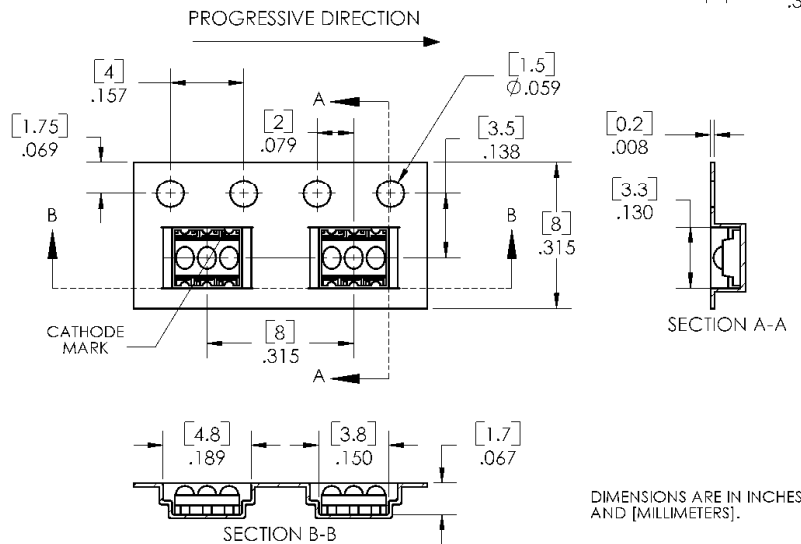
Reel Dimensions: 7-inch reel



Carrier Tape Dimensions: Unloaded



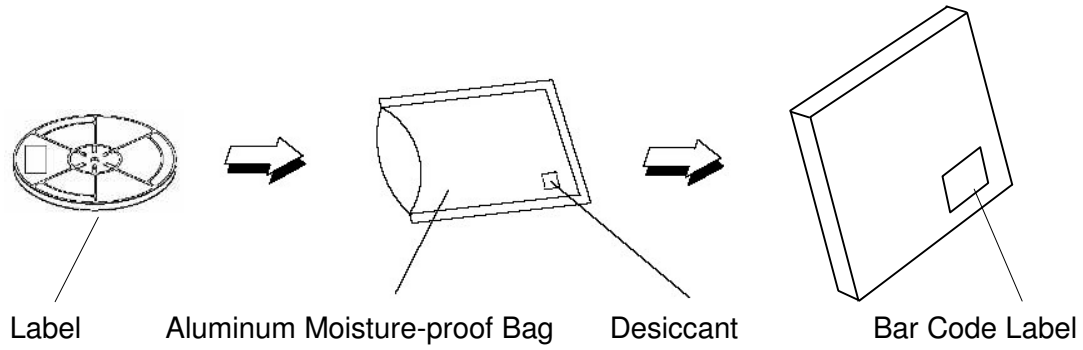
Carrier Tape Dimensions: Loaded quantity 1000 pieces per reel



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Full-Color Top-View Chip LED OVSTRGBLC6

Moisture Resistant Reel Packaging



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