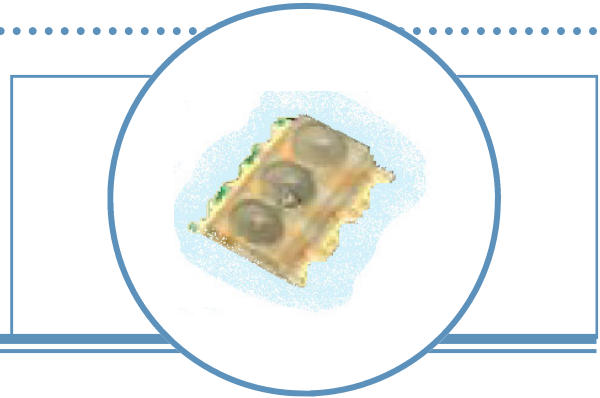


# Full-Color Top-View Chip LED (3.5 x 3.0 x 1.55 lens type)

## 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 [ $\pm 1$  kV, 1 time (200 pF 0 W)]

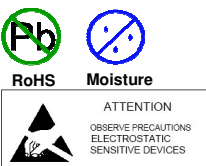
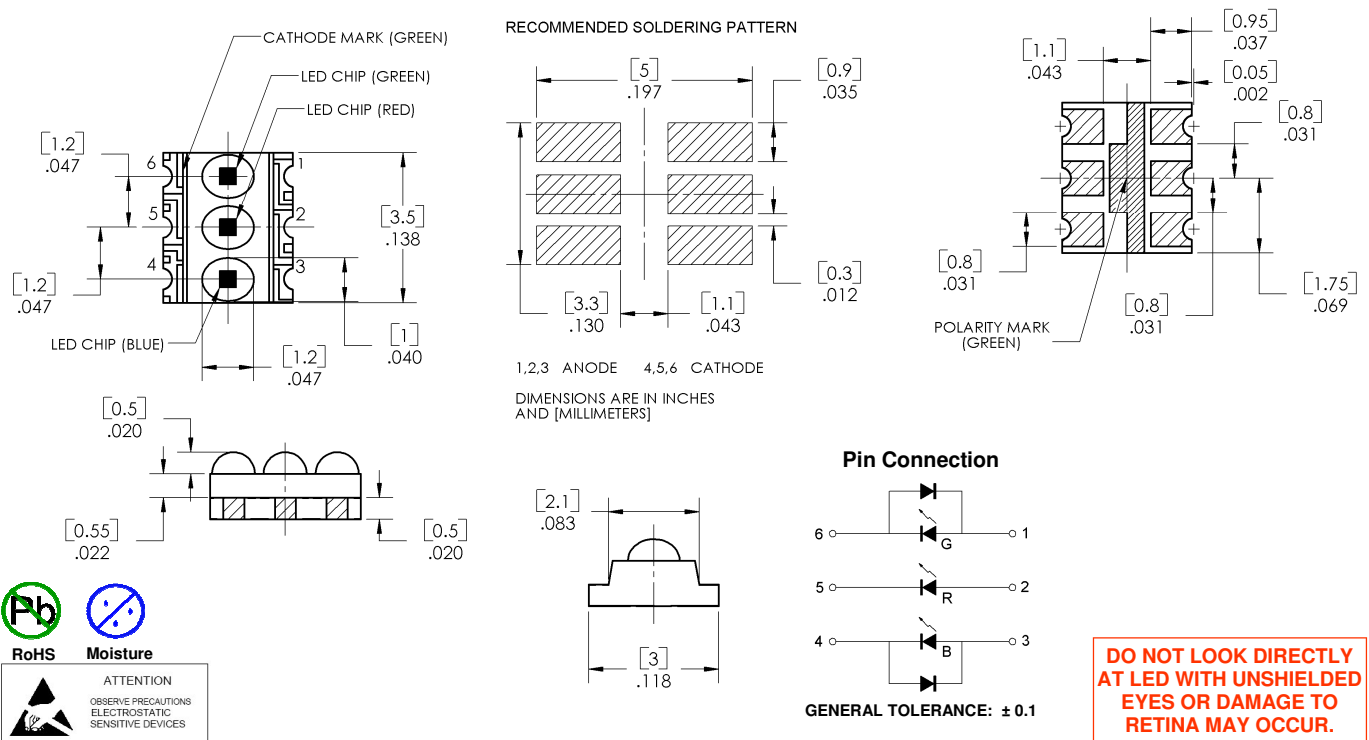


The **OVSTRGBLC6** is a full-color chip LED with multiple viewing angles and the ability to produce all colors of the visible spectrum, plus white. This small package, combined with high-light output, is ideal for miniature applications.

## 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.

### 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 <sup>1</sup>	100	100	100	mA
$\Delta I_P$	DC Forward Current Reduction <sup>2</sup> (1 chip on)	-0.425			mA / °C
	DC Forward Current Reduction <sup>2</sup> (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	$V_R = 5\text{ V}$
$\lambda_D$	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	$I_F = 5\ \mu\text{A}$
$\lambda_D$	Dominant Wavelength	520	----	540	nm	$I_F = 20\text{ mA}$
$\lambda\Delta$	Spectral Line Half Width	----	35	----	nm	$I_F = 20\text{ mA}$

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

### 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	$I_F = 5 \mu\text{A}$
$\lambda_D$	Dominant Wavelength	460	----	480	nm	$I_F = 20 \text{ mA}$
$\lambda\Delta$	Spectral Line Half Width	----	25	----	nm	$I_F = 20 \text{ mA}$

### Ranking

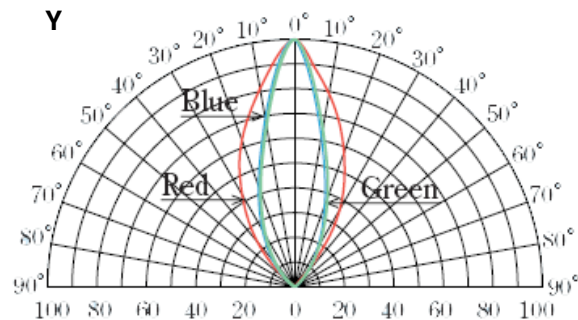
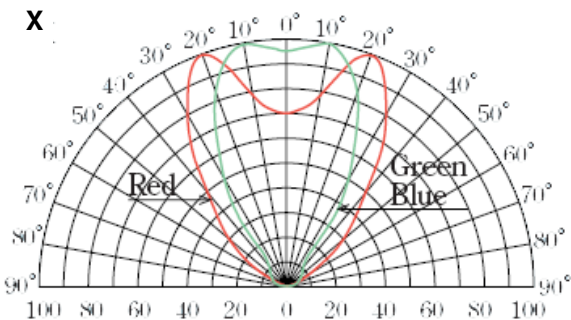
$I_F = 20 \text{ mA}$

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:

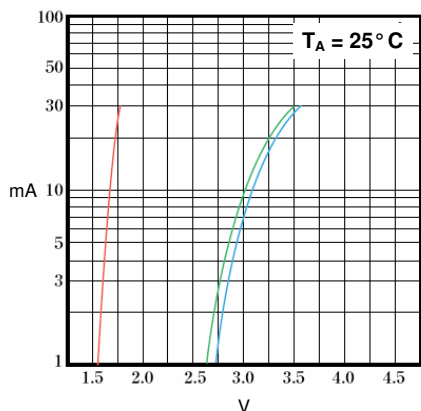
1. Please contact Optek for designation of Luminous Intensity Ranks.
2. Please state Part Number OVSTRGBLC6 when making an inquiry.

### Radiation Patterns

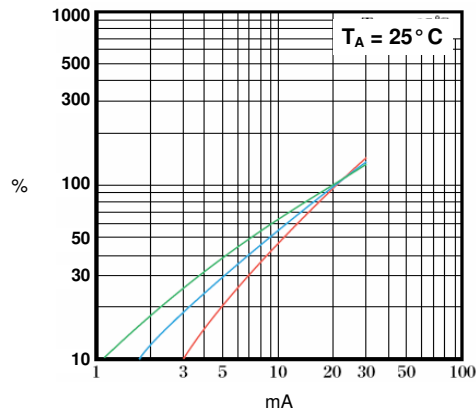


OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

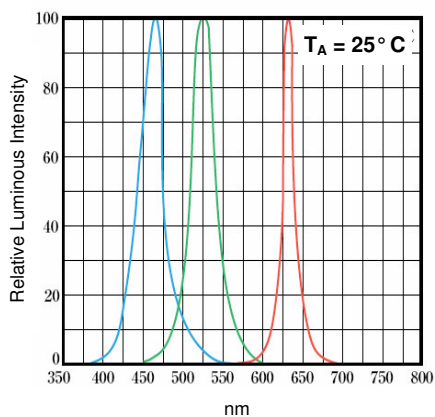
### Typical Electro-Optical Characteristics Curves



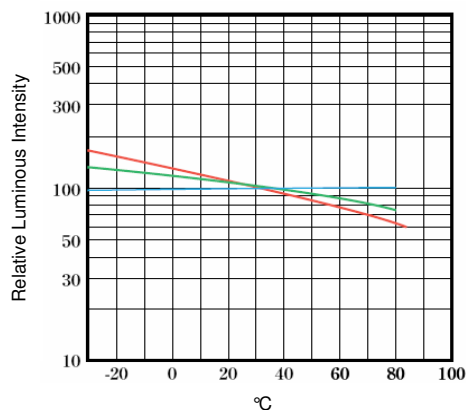
Forward Current vs Forward Voltage



Relative Luminous Intensity vs Forward Current



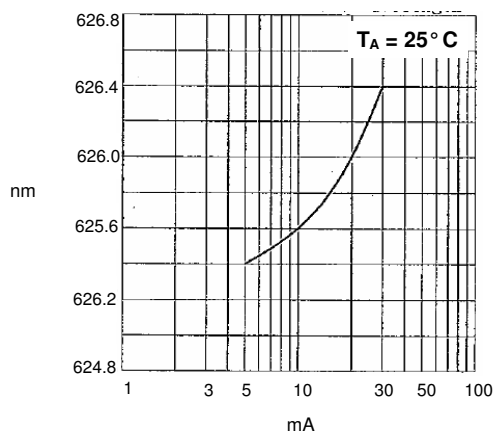
Relative Luminous Intensity vs Wavelength



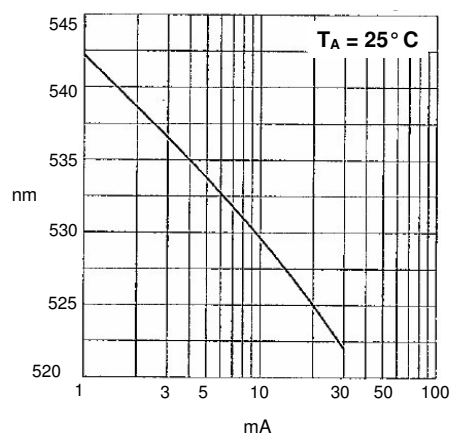
Relative Luminous Intensity vs Ambient Temperature

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

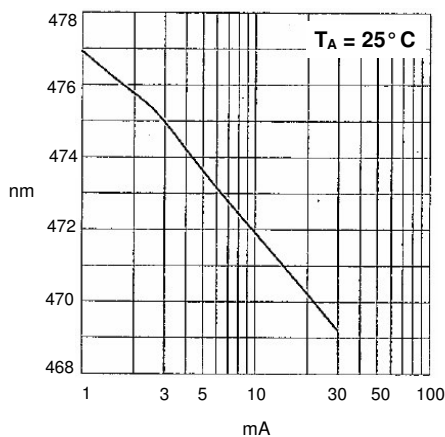
### Typical Electro-Optical Characteristics Curves



Red: Forward Current vs Dominant Wavelength



Green: Forward Current vs Dominant Wavelength

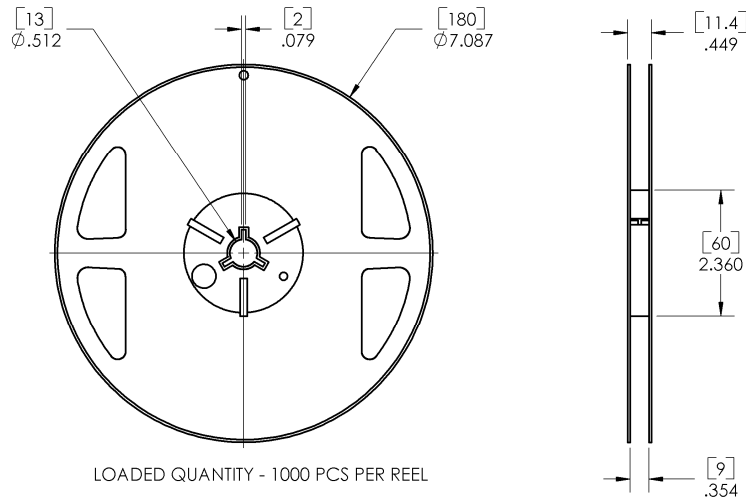


Blue: Forward Current vs Dominant Wavelength

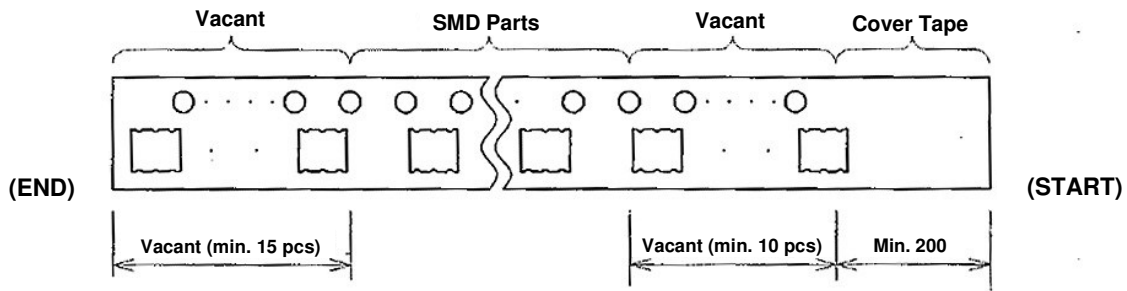
OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

# Full-Color Top-View Chip LED OVSTRGBLC6

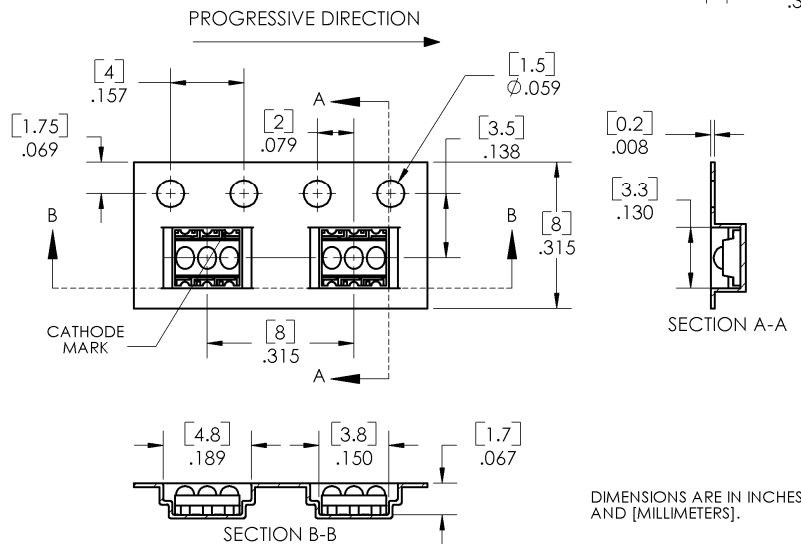
## Reel Dimensions: 7-inch reel



## Carrier Tape Dimensions: Unloaded



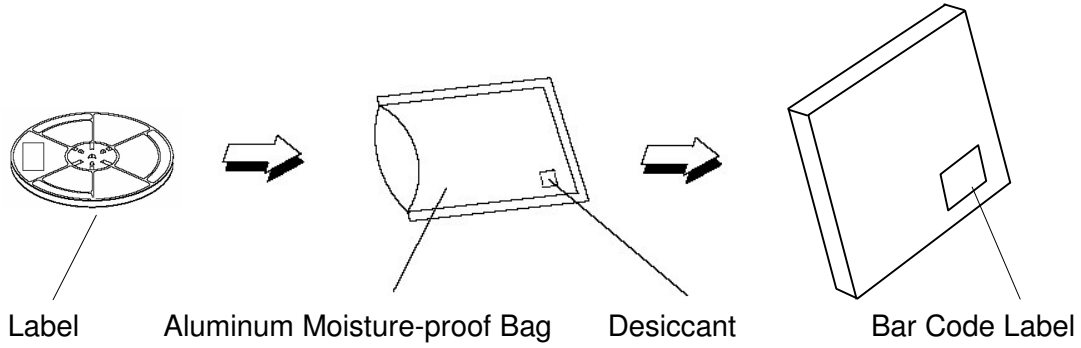
## Carrier Tape Dimensions: Loaded quantity 1000 pieces per reel



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

## Moisture Resistant Reel Packaging



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