

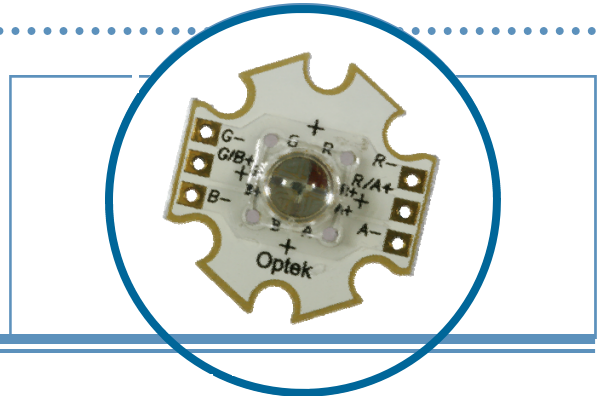
# Optimal IV<sup>®</sup> Star Series

## Multi-LED Recessed Die Design (RDD)

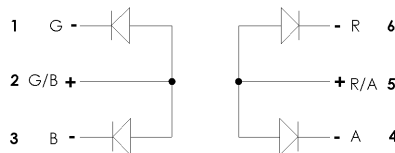
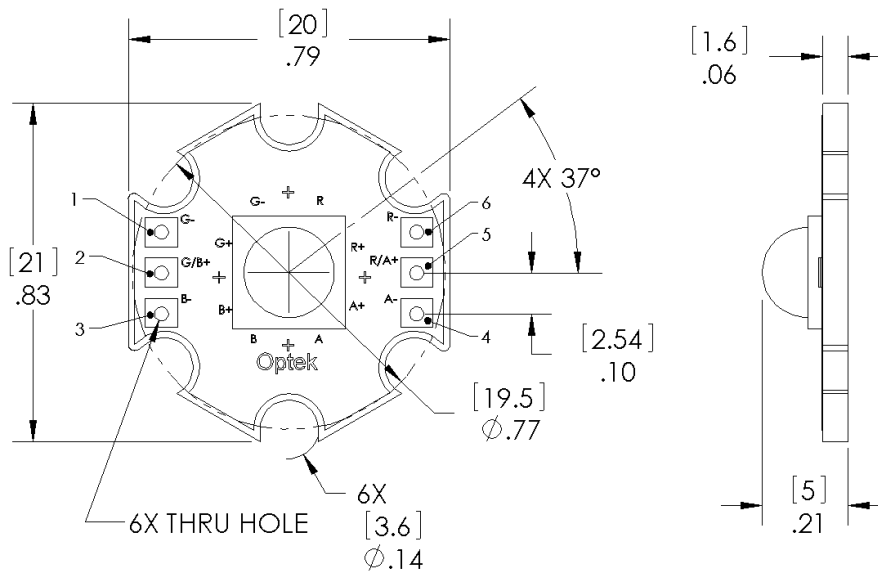


### OV4ZRGBA

- Designed for 4 1-watt chips in recessed cavity with an optical grade 5mm diameter lens
- Exceptional thermal resistance (< 2° C/W junction to heatsink)
- Soldering points or pins provided for electrical connections
- Locating slots for M3 screws



Part Number	Color	Material	Beam Angle	Typ. Dominant Wavelength (nm)	Typical Luminous Flux (lm)		Typical Forward Voltage (V <sub>F</sub> )
					350 mA	700mA	350 mA
OV4ZRGBA	Red	AllnGaP	60°	625	35	75	2.5
	Green	InGaN		522	30	45	3.9
	Blue	InGaN		455	5	9	3.6
	Amber	AllnGaP		585	36	55	2.5



PIN #	DESIGNATOR
1, 6	CATHODE
2, 5	ANODE
3, 4	CATHODE

#### Notes:

- Test conditions: I<sub>F</sub>=350mA/700mA; T<sub>J</sub><130°C
- All dimensions are in inches & [millimeters].
- Additional heat sinking required.

**DO NOT LOOK DIRECTLY AT LED WITH UNSHIELDED EYES OR DAMAGE TO RETINA MAY OCCUR.**



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

DC Forward Current /die	700 mA
Peak Pulsed Forward Current <sup>1</sup>	6.0 A
Reverse Voltage	5 V
Maximum Allowable Junction Temperature <sup>2</sup>	130° C
Storage and Operating Temperature	-50° ~ +100 ° C
Electrostatic Discharge Classification (JEDEC-JESD22-A114F)	Class 1C

Notes:

1. Pulse width 1 ms maximum. Duty cycle 1/16.
2. Thermal Resistance junction to Board ( $T_{jhs}$ ) is <2° C/W

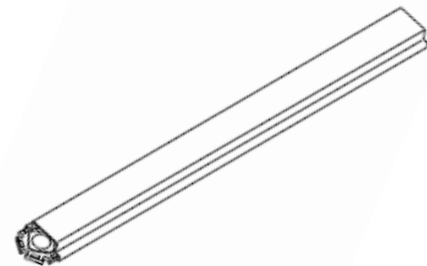
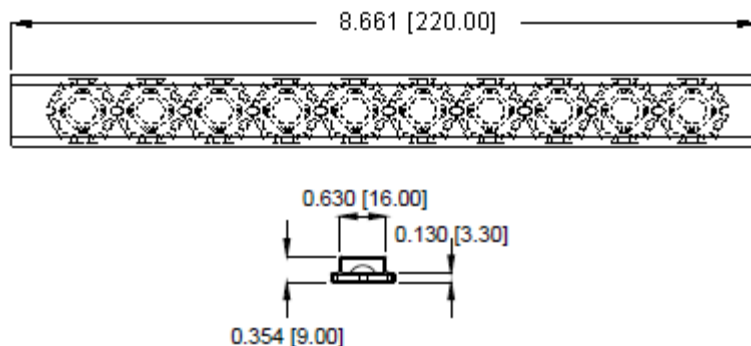
## Electrical Characteristics ( $I_F = 350 \text{ mA}$ , $T_J = 25^\circ \text{ C}$ )

SYMBOL	PARAMETER	TYP	MAX	UNITS
$V_F$	Forward Voltage ( <b>Amber</b> )	2.5	3.0	V
	Forward Voltage ( <b>Blue</b> )	3.6	4.0	V
	Forward Voltage ( <b>Green</b> )	3.9	4.4	V
	Forward Voltage ( <b>Red</b> )	2.5	3.0	V
	$V_{F\_Temperature}$ Co-efficient ( <b>Amber &amp; Red</b> )	-6.42	----	mV/°C
	$V_{F\_Temperature}$ Co-efficient ( <b>Blue</b> )	-4.81	----	mV/°C
	$V_{F\_Temperature}$ Co-efficient ( <b>Green</b> )	-4.95	----	mV/°C

## Optical Characteristics ( $I_F = 350 \text{ mA/die}$ , $T_J = 25^\circ \text{ C}$ )

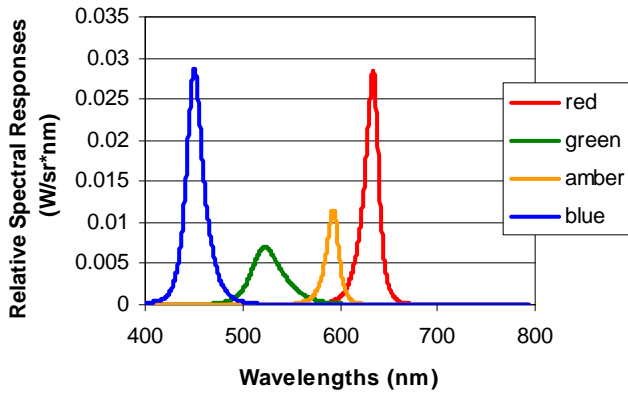
COLOR	LUMINOUS FLUX (lm) @ $I_F = 350 \text{ mA}$		DOMINANT WAVELENGTH			SPECTRAL HALF WIDTH	DOMINANT WAVELENGTH TEMPERATURE CO-EFFICIENT
	MIN	TYP	MIN	TYP	MAX		
Amber	15	36	580	585	590	16 nm	0.07 nm/° C
Blue	5	5	450	455	460	20 nm	0.04 nm/° C
Green	30	30	520	522	525	40 nm	0.04 nm/° C
Red	18	35	620	625	630	37 nm	0.05 nm/° C

Packaging: 10 Optimal IV<sup>®</sup> stars per tube

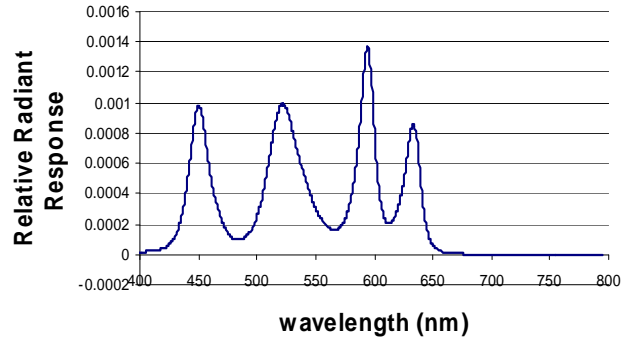


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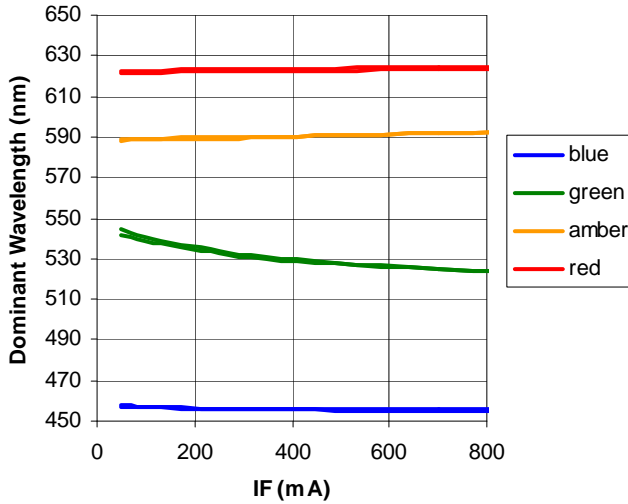
Relative Spectral Responses @ 350mA / die



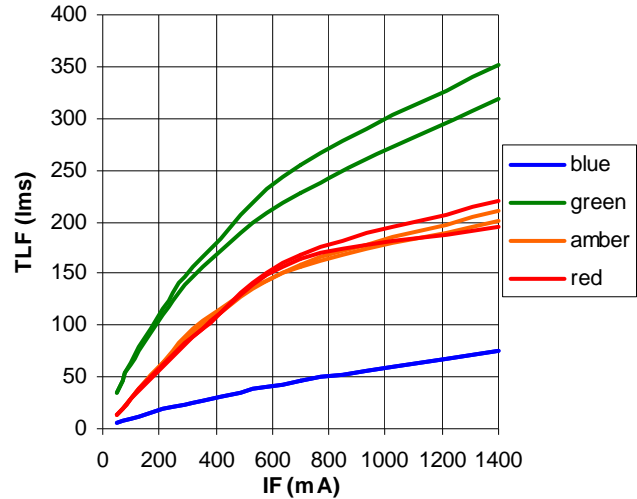
Spectral Responses for CRI 90  
(varied RGBA I<sub>F</sub> Drives)



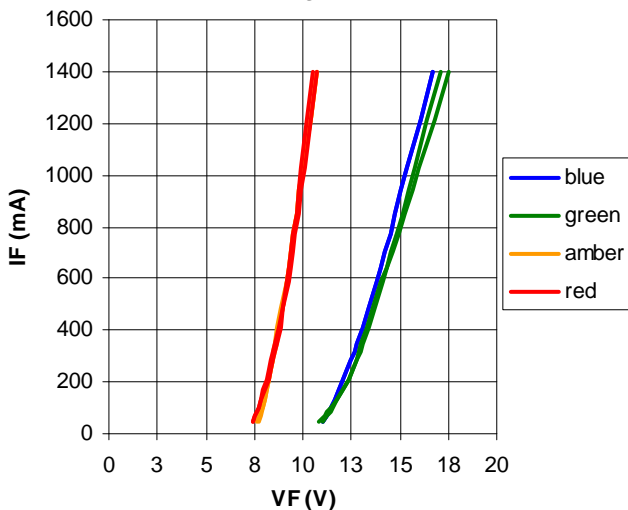
Dominant Wavelength vs IF



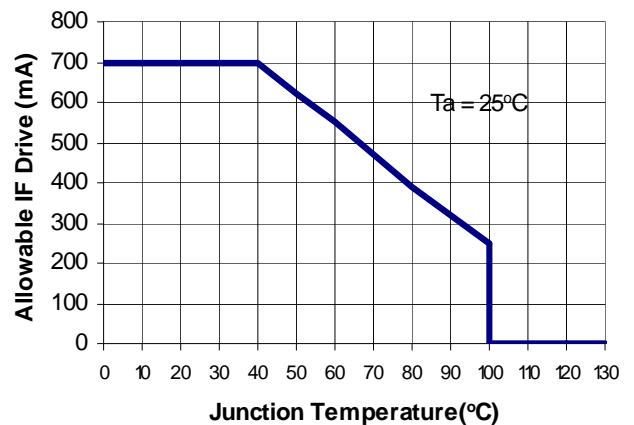
Total Luminous Flux vs IF



IF vs VF



Derating Curve/die



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