

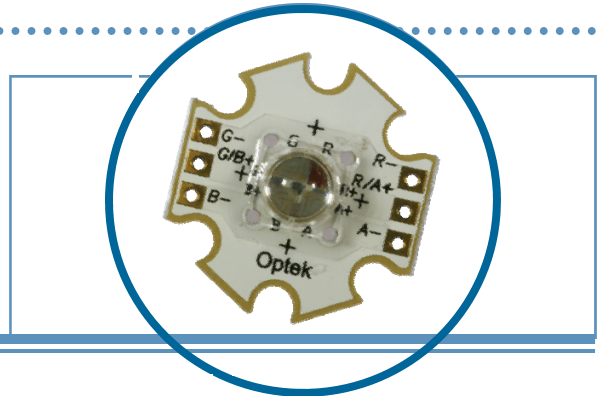
Optimal IV[®] Star Series

Multi-LED Recessed Die Design (RDD)

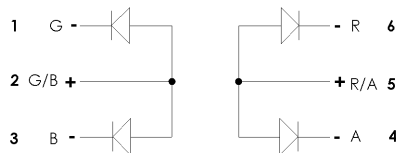
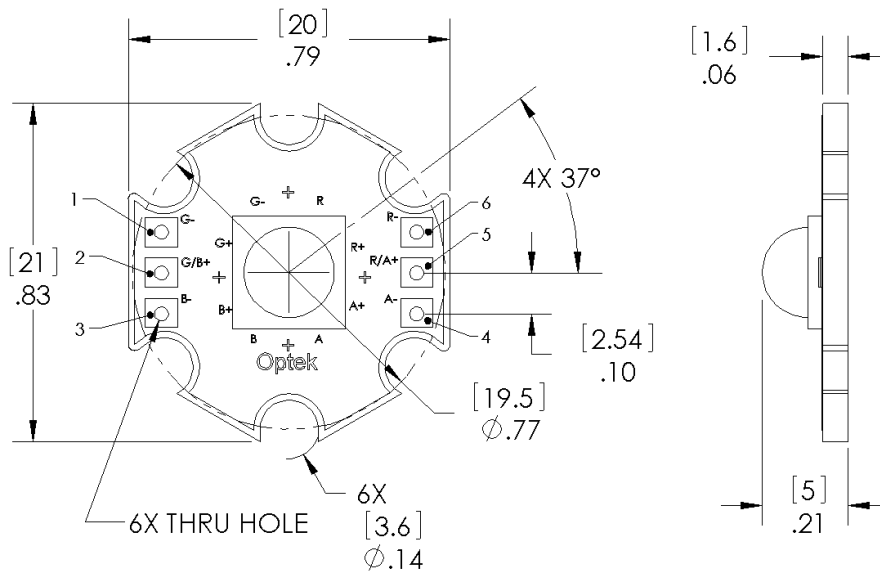


OV4ZRGBA

- 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 _F) |
|-------------|-------|----------|------------|-------------------------------|----------------------------|-------|---|
| | | | | | 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_F=350mA/700mA; T_J<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 ¹ | 6.0 A |
| Reverse Voltage | 5 V |
| Maximum Allowable Junction Temperature ² | 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

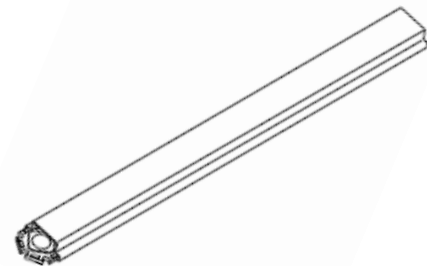
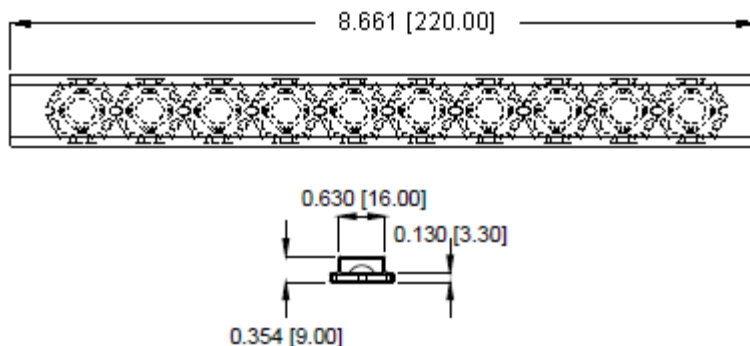
Electrical Characteristics ($I_F = 350\text{ mA}$, $T_J = 25^{\circ}\text{ C}$)

| SYMBOL | PARAMETER | TYP | MAX | UNITS |
|--------|--|-------|------|-------|
| V_F | Forward Voltage (Amber) | 2.5 | 3.0 | V |
| | Forward Voltage (Blue) | 3.6 | 4.0 | V |
| | Forward Voltage (Green) | 3.9 | 4.4 | V |
| | Forward Voltage (Red) | 2.5 | 3.0 | V |
| | $V_{F_Temperature}$ Co-efficient (Amber & Red) | -6.42 | ---- | mV/°C |
| | $V_{F_Temperature}$ Co-efficient (Blue) | -4.81 | ---- | mV/°C |
| | $V_{F_Temperature}$ Co-efficient (Green) | -4.95 | ---- | mV/°C |

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

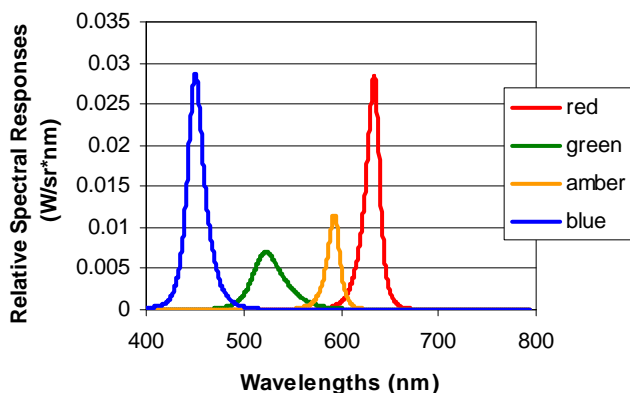
| COLOR | LUMINOUS FLUX (lm) @ $I_F = 350\text{ mA}$ | | DOMINANT WAVELENGTH | | | SPECTRAL HALF WIDTH | DOMINANT WAVELENGTH TEMPERATURE CO-EFFICIENT |
|-------|--|-----|---------------------|-----|-----|---------------------|--|
| | MIN | TYP | MIN | TYP | MAX | | |
| Amber | 15 | 36 | 580 | 585 | 590 | 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[®] stars per tube

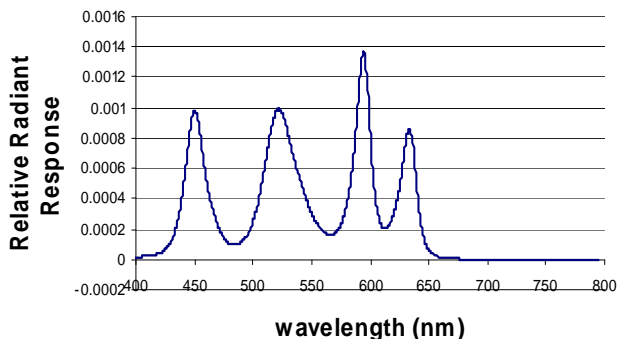


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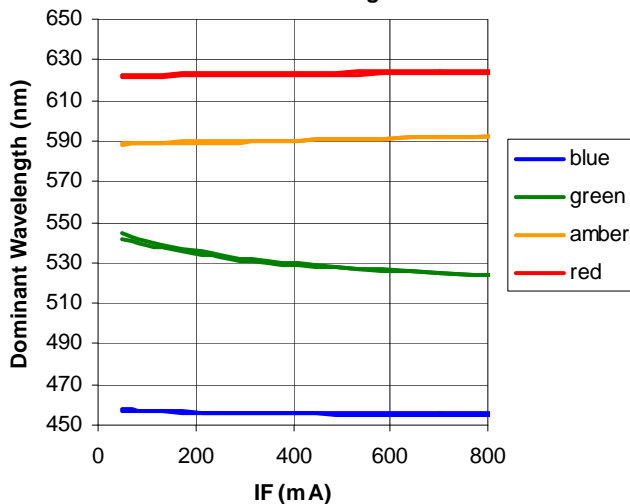
Relative Spectral Responses @ 350mA / die



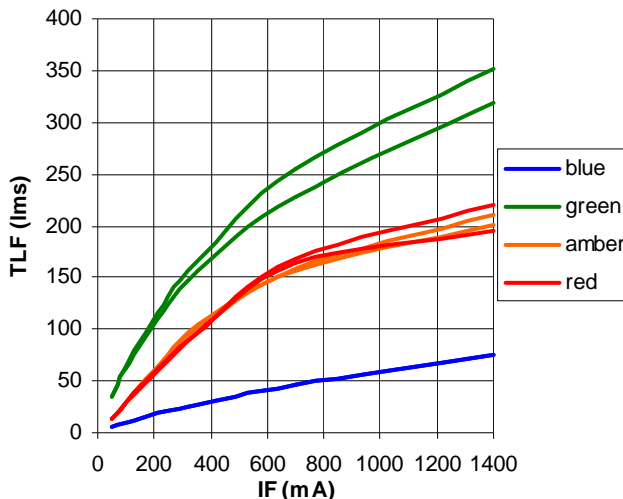
Spectral Responses for CRI 90
(varied RGBA I_F Drives)



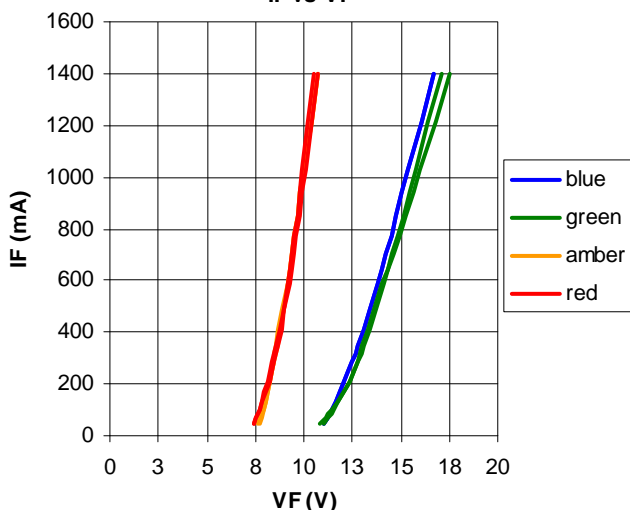
Dominant Wavelength vs IF



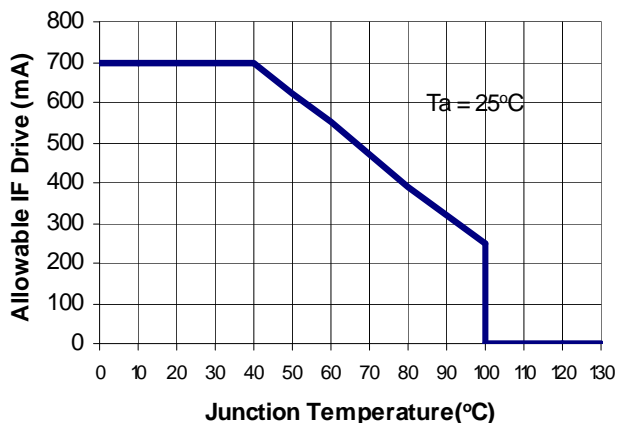
Total Luminous Flux vs IF



IF vs VF



Derating Curve/die



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Mouser Electronics

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