慧明光电（深圳）有限公司
KINDWIN TECHNOLOGY (H.K.) CO. LTD.

# High Power R、G、B LED:1W

## *KPTR-080*

***FEATURES***

- ***High Flux per LED***
- ***Long lifespan (up to 100K hours)***
- ***Lambertian / Collimated Radiation Pattern***
- ***More efficiency than incandescent lamps / most halogen lamps***
- ***Low voltage DC operated***
- ***Cool beam ， safe touched***
- ***Instant light (less than 100ns)***
- ***NO UV***
- ***Superior ESD protection***
- ***Soldering methods: IR reflow soldering /and hand soldering***

***Applications***

- ***•Indoor and outdoor displays (e.g. traffic lights; writing lights)***
- ***•LED chips can be controlled separately to display various colors including white color***
- ***•Full color displays, RGB-Lighting***
- ***•Backlighting (LCD, switches, keys, illuminated advertising, general lighting)***

Kindwin Technology (H.K.) LTD.
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## ***Maximum Ratings***

| Maximum Ratings Parameter | Symbol | Value | | | Unit |
|---|---|---|---|---|---|
| | | Red | Green | Blue | |
| Operating Temperature Range | Top | – 40 … + 100 | | | ° C |
| Storage Temperature Range | Tstg | – 40 … + 100 | | | ° C |
| Junction Temperature | Tj | 125 | | | ° C |
| Forward current *(TA=25 ° C)* | IF | 350 | | | mA |
| Surge Current *T ≤ 10 μ ses, D=0.005, TA=25 ° C* | IF | 500 | | | mA |
| Reverse Voltage *(TA=25 ° C)* | VR | 5 | | | V |
| Power Consumption *(TA=25 ° C)* | Ptot | 0.77 | 1.24 | 1.24 | W |
| Thermal Resistance Soldering Point | Rth-js | 9 | | | K/W |

## ***Characteristics($T_A$ = 25 °C)***

| Characteristics( TA=25 ° C) Parameter | | Symbol | Value | | | Unit |
|---|---|---|---|---|---|---|
| | | | Red | Green | Blue | |
| Wavelength At Peak Emission | (typ.) $I_F$ = 350mA | $\lambda_{peak}$ | 632 | 520 | 465 | nm |
| Dominant Wavelength | $I_F$ = 350mA | $\lambda_{dom}$ | 625±3 | 528± 9 | 460± 6 | nm |
| Spectral Bandwidth at 50 % $\Phi_{rel\ max}$ | (typ.) $I_F$= 350mA | Δλ | 18 | 33 | 25 | nm |
| 50% Power Angle | (typ.) | 2θ½ | 130 | 130 | 130 | deg. |
| Forward voltage $I_F$ =350mA | (min.) | $V_F$ | 2.1 | 2.79 | 2.79 | V |
| | (typ.) | $V_F$ | 2.2 | 3.55 | 3.55 | V |
| | (max.) | $V_F$ | 2.5 | 3.99 | 3.99 | V |
| Reverse current(VR=5V) | (max.) | $I_R$ | 50 | | | μA |
| Temperature coefficient of $\lambda_{peak}$ *–10°C ≤ T ≤ 100°C* $I_F$ =350mA | (typ.) | $TC_{\lambda peak}$ | 0.13 | 0.05 | 0.05 | nm/K |
| Temperature coefficient of $\lambda_{dom}$ *–10°C ≤ T ≤ 100°C* $I_F$ =350mA | (typ.) | $TC_{\lambda dom}$ | 0.03 | 0.04 | 0.04 | nm/K |
| Temperature coefficient of $V_F$ *–10°C ≤ T ≤ 100°C* $I_F$ =350mA | (typ.) | $TC_{VF}$ | -2 | -2 | -2 | Mv/K |

Individual groups on page 5

## Ordering Information

| Ordering Information Part No. | Color of Emission | Luminous Flux(Lm) | | |
|---|---|---|---|---|
| | | Red (IF=350mA) | Green (If=350mA) | Blue (If=350mA) |
| KPTR-080 | Red | 25-50 | | |
| | Gree | | 25-50 | |
| | Blue | | | 7-18 |

## Floating Bins

| Red($I_f$=350mA) |
|---|
| G=23…30(lm) |
| H=30…39(lm) |
| I=39…51(lm) |

Floating Bins

| Pure Green($I_f$=350mA) |
|---|
| I=25…33(lm) |
| J =33…43(lm) |
| K=43… 55(lm) |

Floating Bins

| Blue($I_f$=350mA) |
|---|
| D=7…9.1(lm) |
| E=9.1…11.8(lm) |
| F=11.8…16(lm) |

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***Wavelength Groups (Dominant Wavelength)***

| Group | Red | | Unit |
|---|---|---|---|
| | min | max | |
| 1 | 622 | 627 | nm |

| Group | Pure Green | | Unit |
|---|---|---|---|
| | min | max | |
| 3 | 520 | 525 | nm |
| 4 | 525 | 530 | nm |
| 5 | 530 | 535 | nm |

| Group | Blue | | Unit |
|---|---|---|---|
| | min | max | |
| 3 | 457 | 462 | nm |
| 4 | 462 | 477 | nm |
| 5 | 467 | 472 | nm |

Group Name on Label

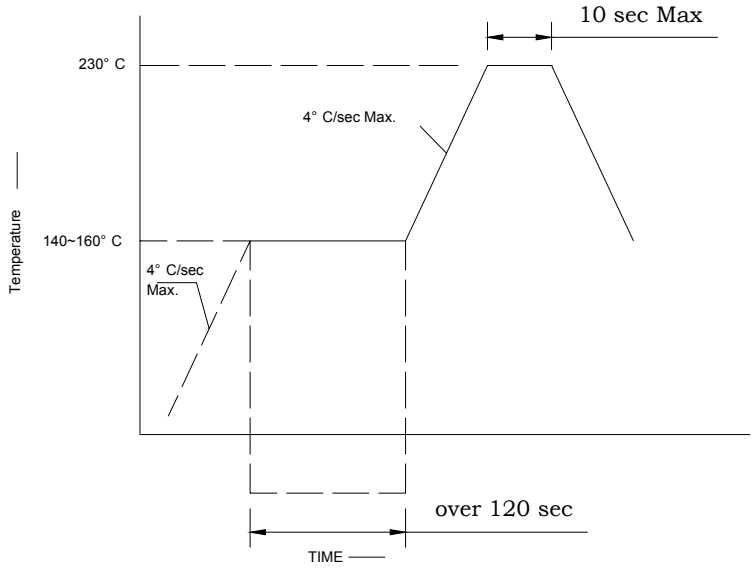
Example:G-1 +I-3 + D-3

Red Green Blue

| Brightness Group (red) | Wavelength (no grouping) (red) | Brightness Group (green) | Wavelength (green) | Brightness Group (blue) | Wavelength (blue) |
|---|---|---|---|---|---|
| G | I | I | 3 | D | 3 |

*Note: No packing unit / tape ever contains more than one brightness group per color.*

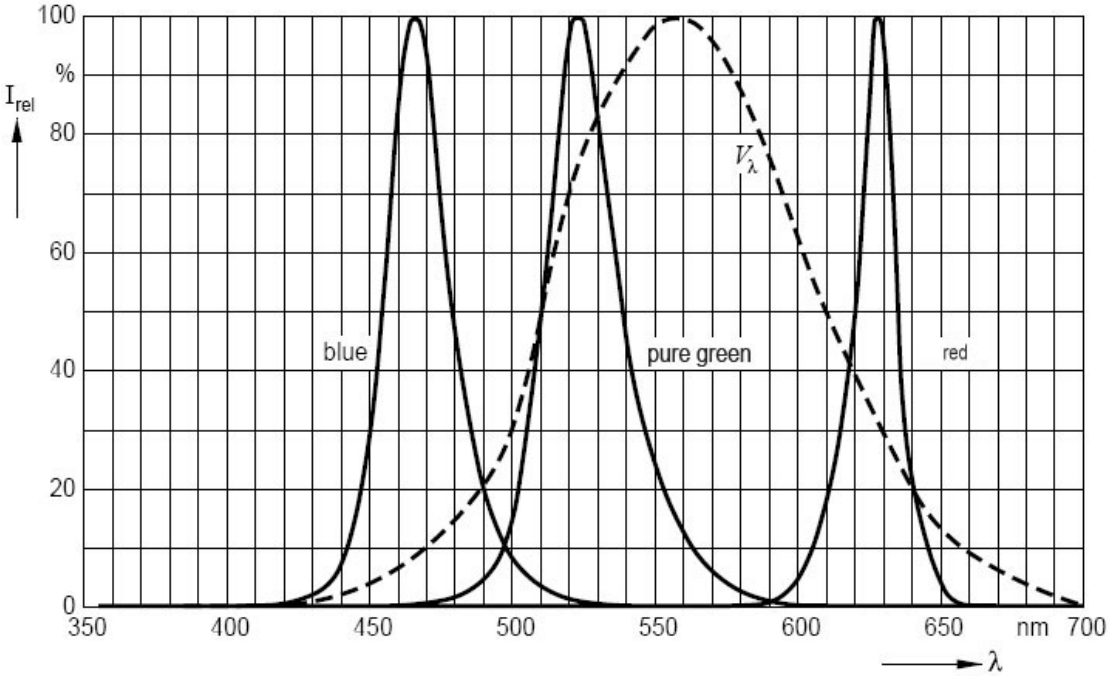
**Figure 9. Recommended SnPb Reflow Soldering Profile.**



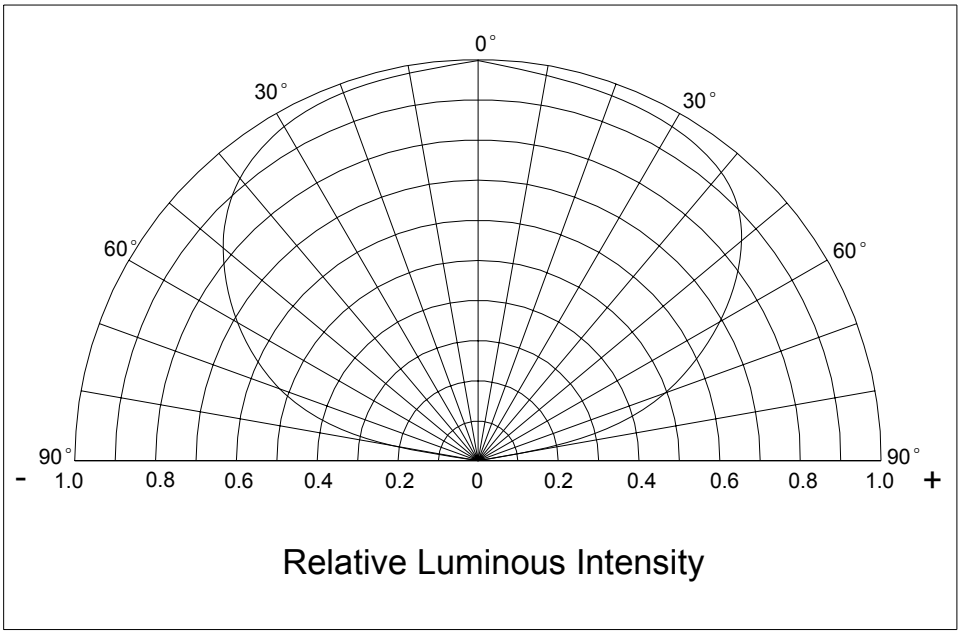
## Relative Spectral Emission

V(λ) = Standard eye response curve

$\Phi_{rel} = f(\lambda)$; $T_A$ = 25 °C; $I_F$= 350mA

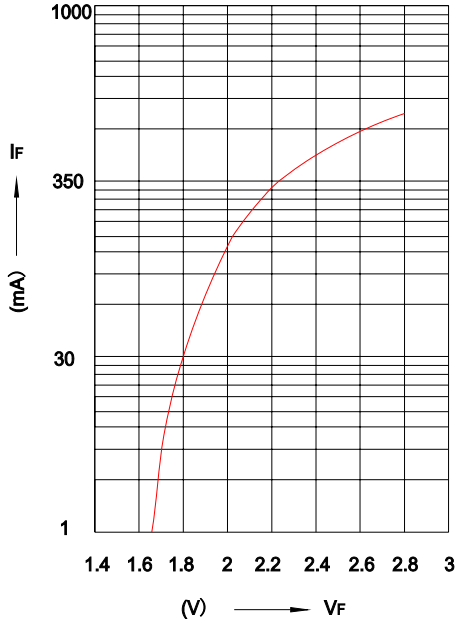



## Radiation Characteristics



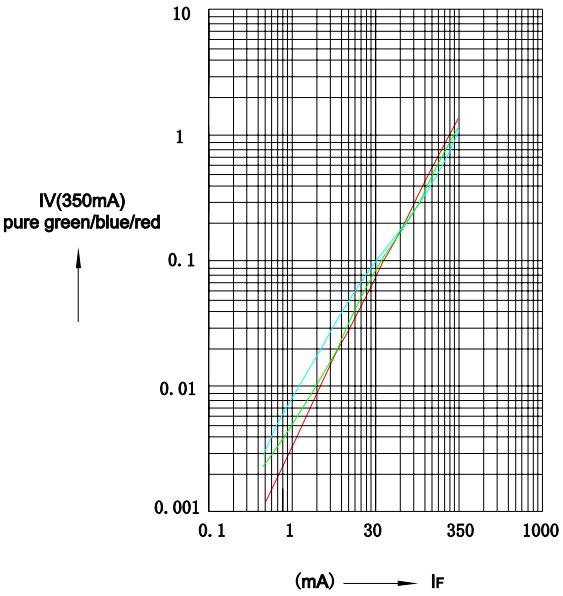
## Forward Current

$T_A$ = 25 °C(red)



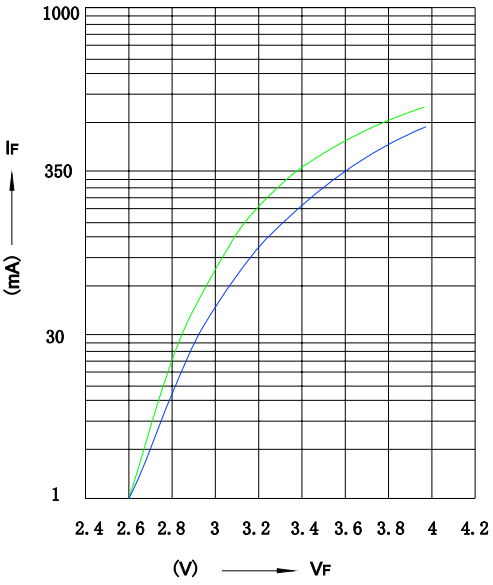

## Relative Luminous Intensity

$T_A$ = 25 °C



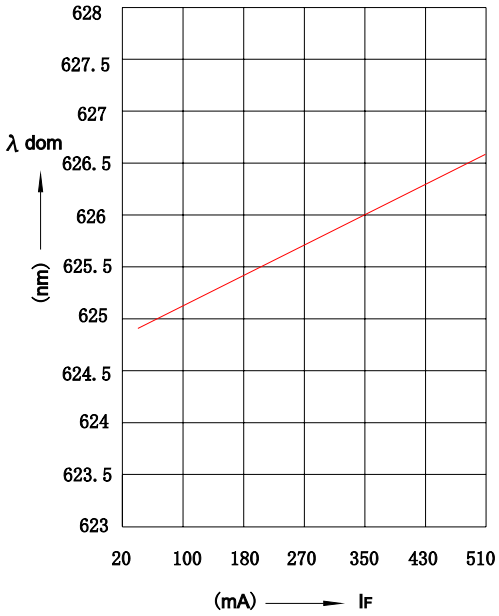

## Forward Current

$T_A$ = 25 °C(pure green/bule)



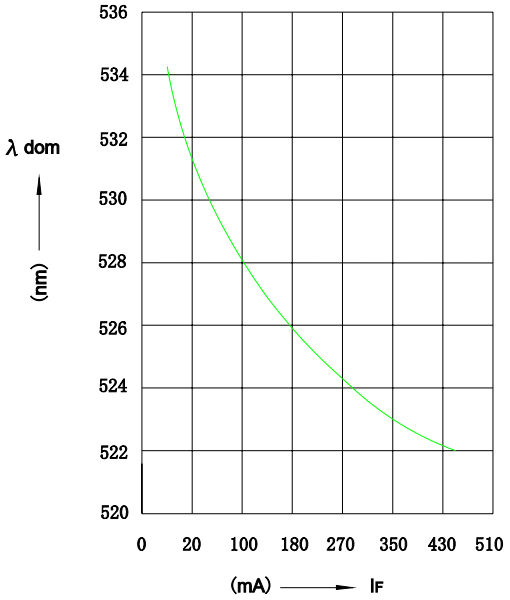

## Dominant Wavelength

$T_A$ = 25 °C ( red)



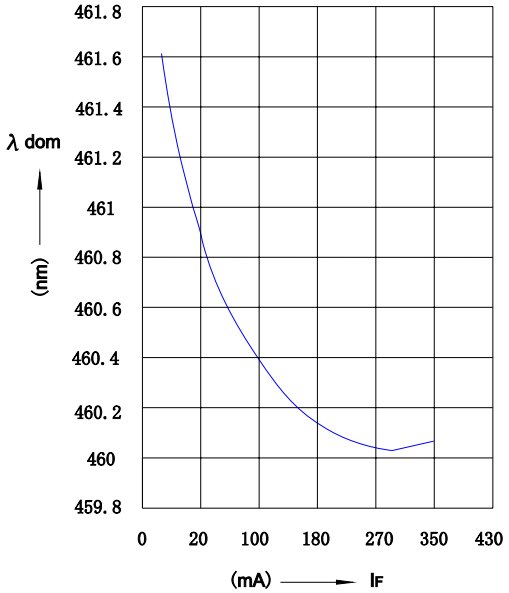
Dominant Wavelength

$T_A$ = 25 °C（pure green）

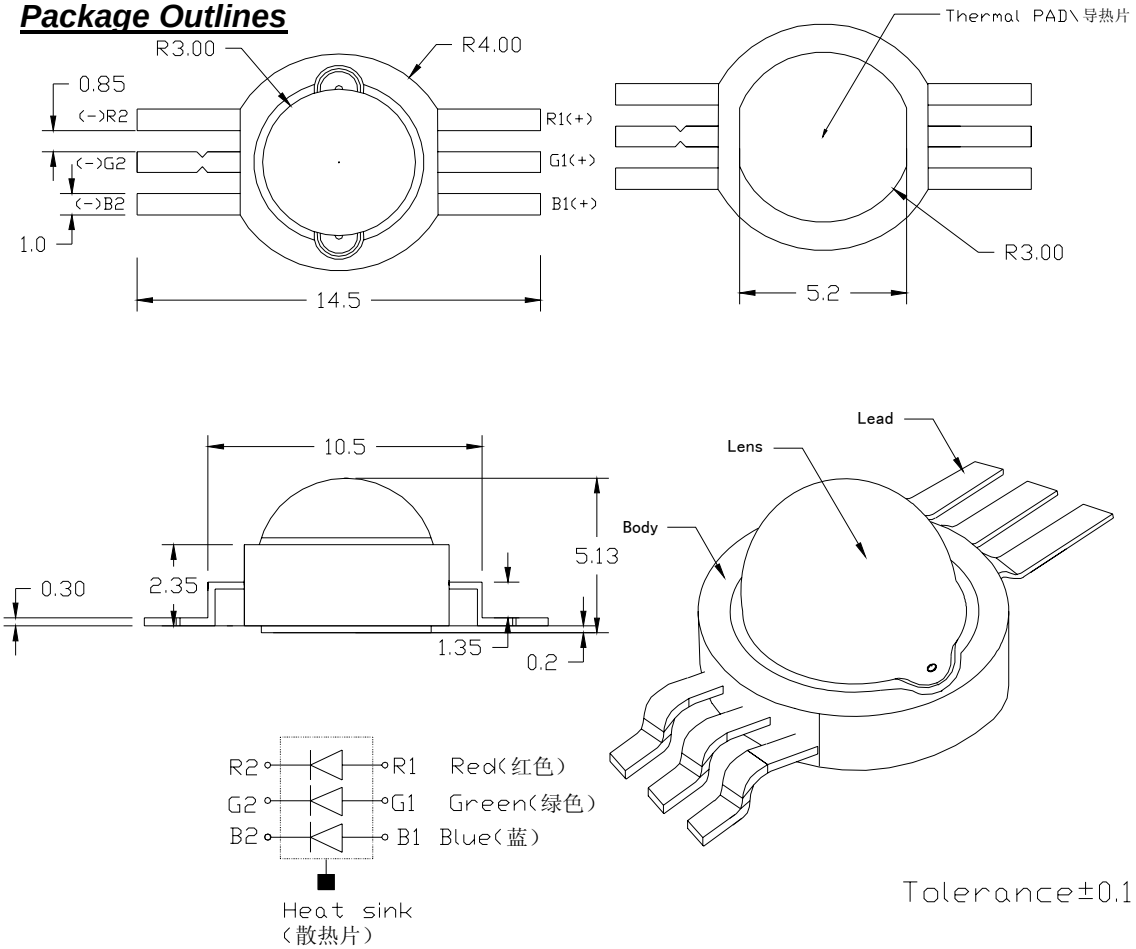



Dominant Wavelength,

$T_A$ = 25 °C（blue）




## Package Outlines

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