

Harvatek 3.0mm Round LED LAMP with Holder**HV-31210/260/SUB-L50-F35**

| | | | | |
|--|--------------------------|-------------------|----------------|--------------------------|
| Official Product | HV-31210/260/SUB-L50-F35 | Customer Part No. | | Data Sheet No. |
| | ***** | ***** | | HV-31210/260/SUB-L50-F35 |
| Specifications are subject to change without notice. Data and drawings herein are copyrighted. | | Oct.19 2020 | Version of 1.0 | Page 1/12 |

DISCLAIMER

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1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

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Compliance and Certification

ISO9002, QS9000 and ISO14001 Certified
RoHS Compliant



Orderable Information

H V - 31210 / 260 / SUB - L50 - F35

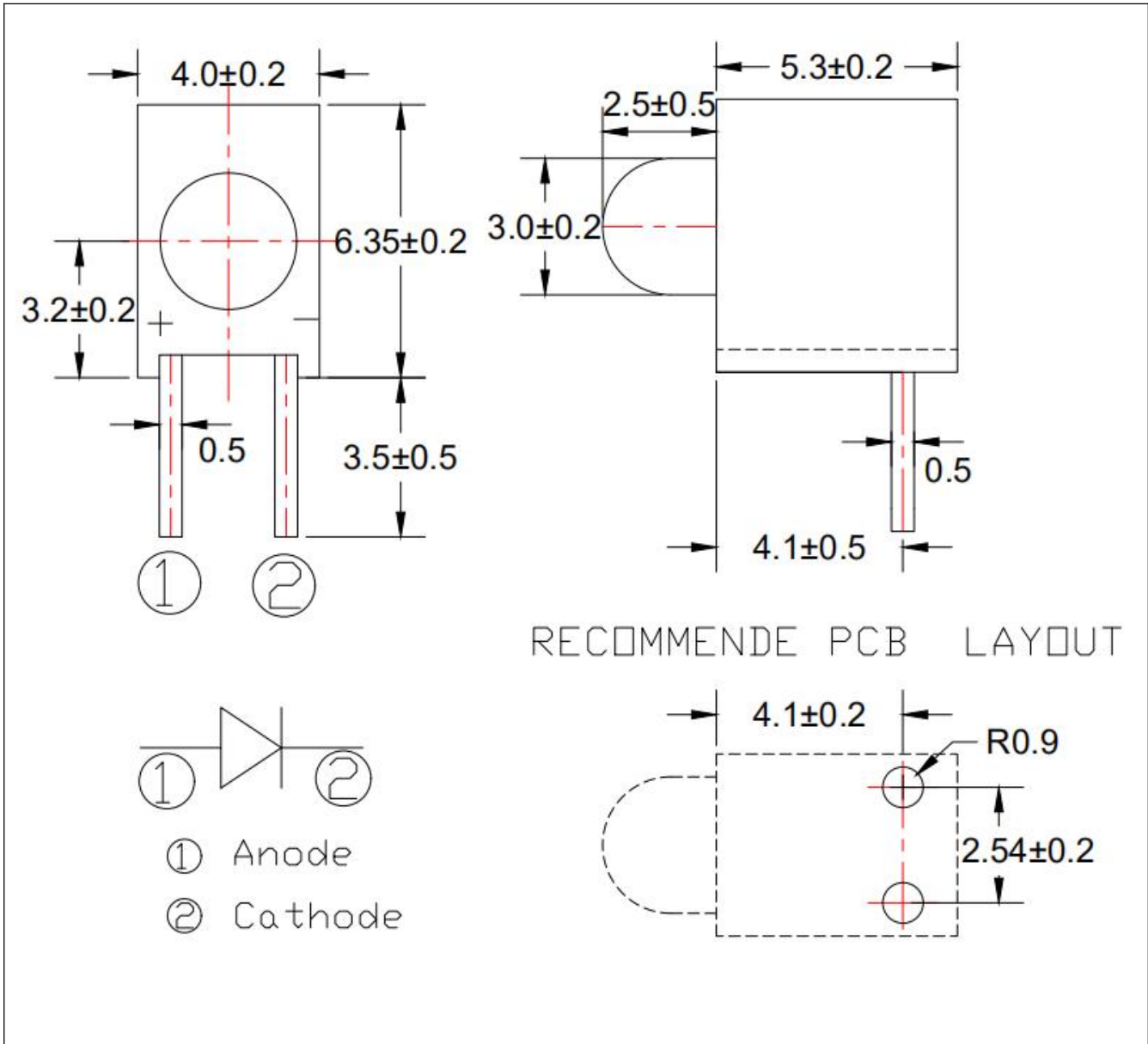
| Series Name | Color Code | Remark |
|------------------|--|--------|
| HV : HARVATEK | 31210:Array 1 Lamp 260: 3.0mm Round LED LAMP. SUB: InGaN 468nm Blue Chip L50: HARVATEK Part No. F35: HARVATEK Part No. | |

Features:

- Stable Color
- Popular 3.0mm through hole package.
- Blue Diffused Lens.

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Package Dimensions:



Notes:

- 1.All dimensions are millimeters.
- 2.Tolerance is +/-0.25mm unless otherwise noted.
- 3.Specifications are subject to change without notice.

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Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Rating | Unit |
|-------------------------|------------------|-----------|------|
| Forward Current | I _F | 30 | mA |
| Operating Temperature | T _{opr} | -40to+85 | °C |
| Storage Temperature | T _{stg} | -40to+100 | °C |
| Soldering Temperature*1 | T _{sol} | 260±5 | °C |
| Power Dissipation | P _d | 120 | mW |
| Reverse Voltage | V _R | 5 | V |
| Peak Forward Current*2 | I _{FP} | 0.1 | A |

*1:Soldering time ≦ 5 seconds. *2:Pulse Width ≦ 100 μ s and Duty ≦ 1%

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Electrical and Optical Characteristic

| Parameter | Symbol | Condition | Min. | Typ. | Max. | Unit |
|------------------------------|-----------------|--------------------|------|------|------|---------------|
| Forward Voltage | V_F | $I_F=20\text{ mA}$ | / | 3.0 | 3.6 | V |
| Reverse Current | I_R | $V_R=5\text{ V}$ | / | / | 10 | μA |
| Luminous Intensity | I_V | $I_F=20\text{ mA}$ | 160 | 250 | / | mcd |
| Viewing Angle | $2\theta_{1/2}$ | $I_F=20\text{ mA}$ | / | 35 | / | deg |
| Dominant Wavelength | λ_d | $I_F=20\text{ mA}$ | 462 | 468 | / | nm |
| Peak Wavelength | λ_p | $I_F=20\text{ mA}$ | 460 | 465 | / | nm |
| Spectrum Radiation Bandwidth | $\Delta\lambda$ | $I_F=20\text{ mA}$ | / | 25 | / | nm |

Notes: $\theta_{1/2}$ is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.

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Specifications for Bin Grading:

| Iv (mcd) | | |
|----------|------|------|
| Grade | Min. | Max. |
| S | 160 | 320 |
| T | 250 | 500 |
| U | 400 | 800 |
| V | 630 | 1250 |

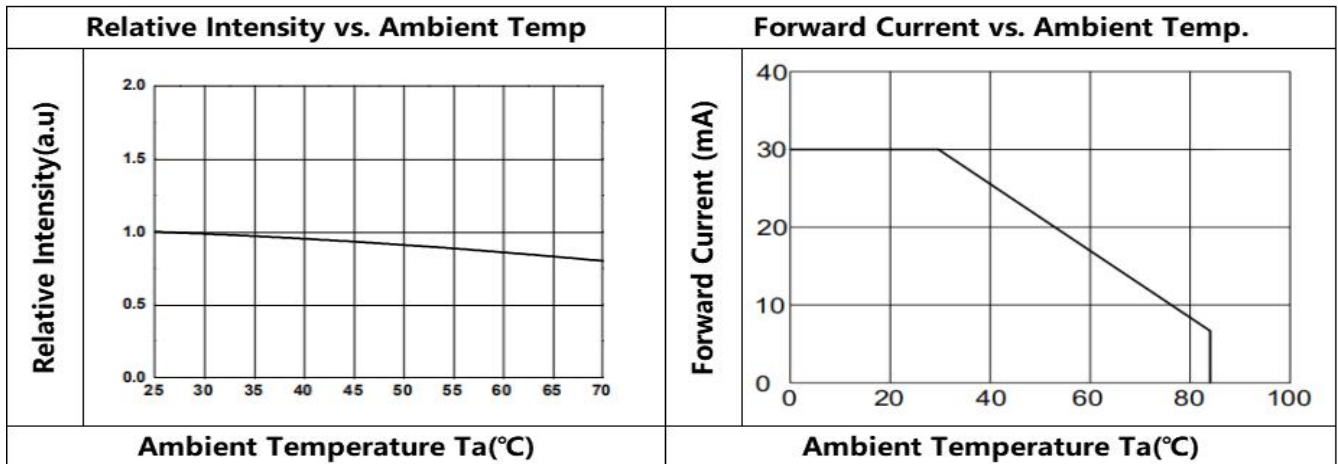
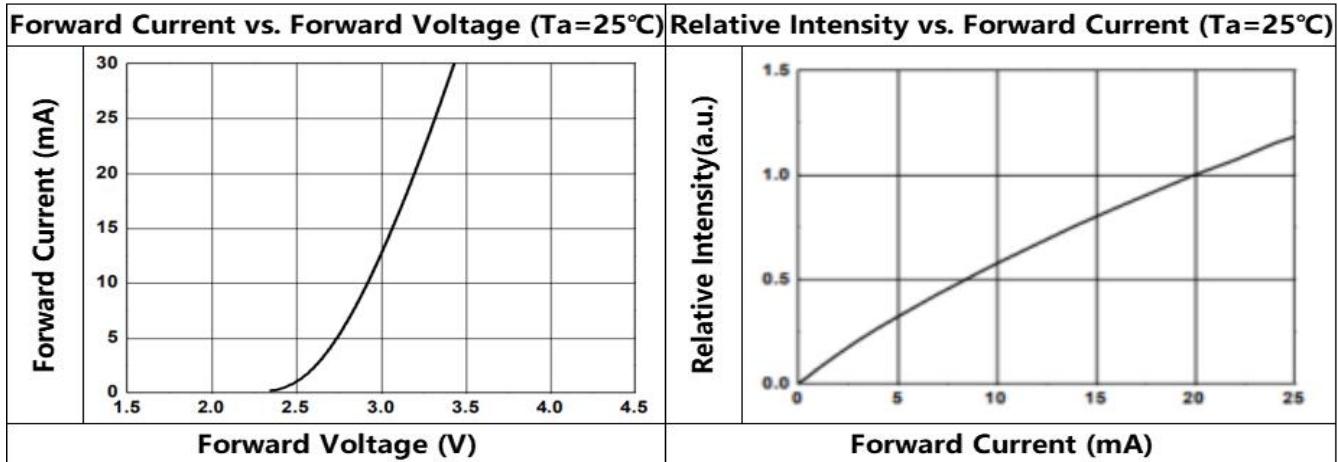
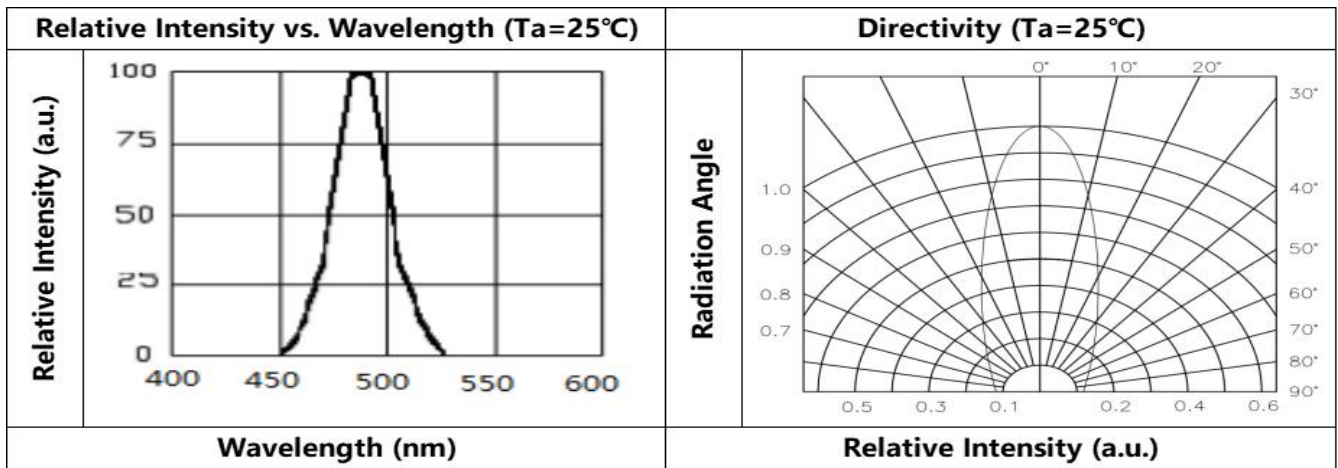
| λd (nm) | | |
|------------------|-------|-------|
| Grade | Min. | Max. |
| 2 | 462.0 | 466.5 |
| 3 | 465.5 | 468.5 |
| 4 | 467.5 | 470.5 |
| 5 | 469.5 | 472.5 |
| 6 | 471.5 | 474.5 |
| 7 | 473.5 | 476.5 |

Notes:

- 1.Luminous intensity: +/-15%.
- 2.Wavelength: +/-1nm.

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Typical Electrical / Optical Characteristics Curves



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Reflow profile

Soldering condition

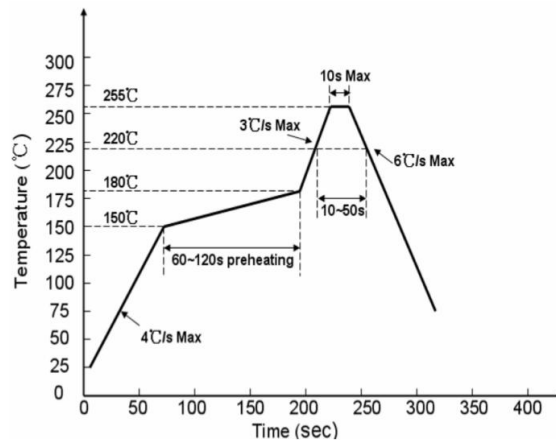
Recommended soldering conditions

| Reflow | | Soldering | |
|------------------|------------------------------|-------------------------------|--|
| Pre-heat | 160~180°C | Temperature Soldering time | 300°CMax. 3 second Max. (one time only) |
| Pre-heat time | 120 seconds Max. | | |
| Peak temperature | 260°CMax. | | |
| Soldering time | 10 seconds Max. | | |
| Condition | Refer to Temperature-profile | | |

- After reflow soldering rapid cooling should be avoided

Pb-free solder temperature profile

- We suggest that the reflow soldering temperature is $240 \pm 5^\circ\text{C}$, the highest control the welding temperature to 260°C ;
- Reflow soldering should not be done more than two times;
- When soldering ,do not put stress on the LEDs during heating;



Soldering iron

1. When hand soldering, keep the temperature of the iron under 300°C , and at that temperature keep the time under 3 sec;
2. The hand soldering should be done only a time;

The basic spec is ≤ 5 sec. when the temperature of 260°C , do not contact the resin when hand soldering;

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Reliability test items and conditions:

The reliability of products shall be satisfied with items listed below.

Confidence level: 97%

LTPD:3%

| No | Item | Test Conditions | Test Hours/Cycle | Sample Size | Failure Judgment Criteria | Ac/Er |
|----|----------------------------------|---|------------------|-------------|--|-------|
| 1 | Solder Heat | TEMP:260°C±5°C | 10 SEC | 76 PCS | Iv ≦ Ivt*0.5 or Vf ≧ U or Vf ≧ L | 0/1 |
| 2 | Temperature Cycle | H:+100°C 15min ∫ 5min L:-40°C 15min | 300 CYCLES | 76 PCS | | 0/1 |
| 3 | Thermal Shock | H:+100°C 5min ∫ 10sec L:-10°C 5min | 300 CYCLES | 76 PCS | | 0/1 |
| 4 | High Temperature Storage | TEMP:100°C | 1000 HRS | 76 PCS | | 0/1 |
| 5 | Low Temperature Storage | TEMP:-40°C | 1000 HRS | 76 PCS | | 0/1 |
| 6 | DC Operating Life | TEMP:25°C IF=20mA | 1000 HRS | 76 PCS | | 0/1 |
| 7 | High Temperature / High Humidity | 85°C/85%RH | 1000 HRS | 76 PCS | | 0/1 |

Note: Ivt: To test Iv value of the chip before the reliability test.

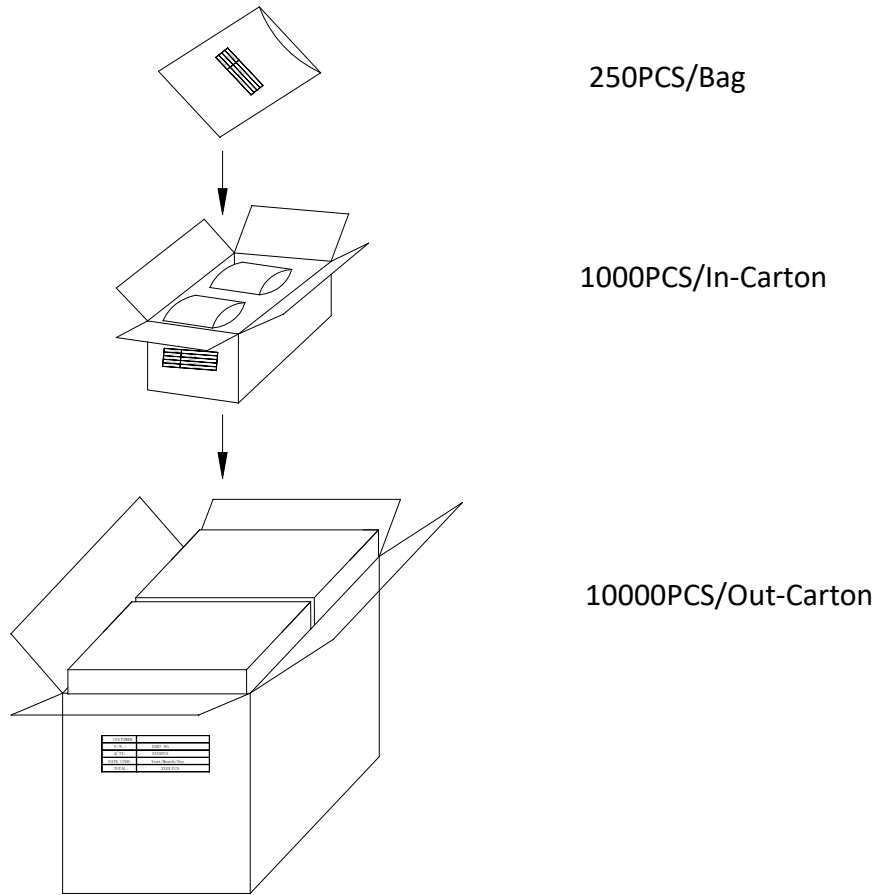
Iv: The test value of the chip that has completed the reliability test

U: Upper Specification Limit

L: Lower Specification Limit

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Packing Specification:



| | | |
|--------------------------|-----------------|-------------|
| | HARVATEK | |
| CPN: | | RoHs |
| P/N: | | |
| | | |
| HV-31210/260/SUB-L50-F35 | | |
| QTY: | | CAT: |
| | | HUE: |
| LOT NO: | | REF: |
| | | |

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Revision History

| Revision | Page | Version No. | Revision Date |
|-----------------|------|-------------|---------------|
| Initial Release | | 1.0 | 10-19-2020 |
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