

**Harvatek 3.0mm Round LED LAMP with Holder  
HV-32690/230/SURSYG**

Official Product	HV-32690/230/SURSYG	Customer Part No.	Data Sheet No.
	*****	*****	CDAE-020-094
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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 - 3 2 6 9 0 / 2 3 0 / SUR SYG**

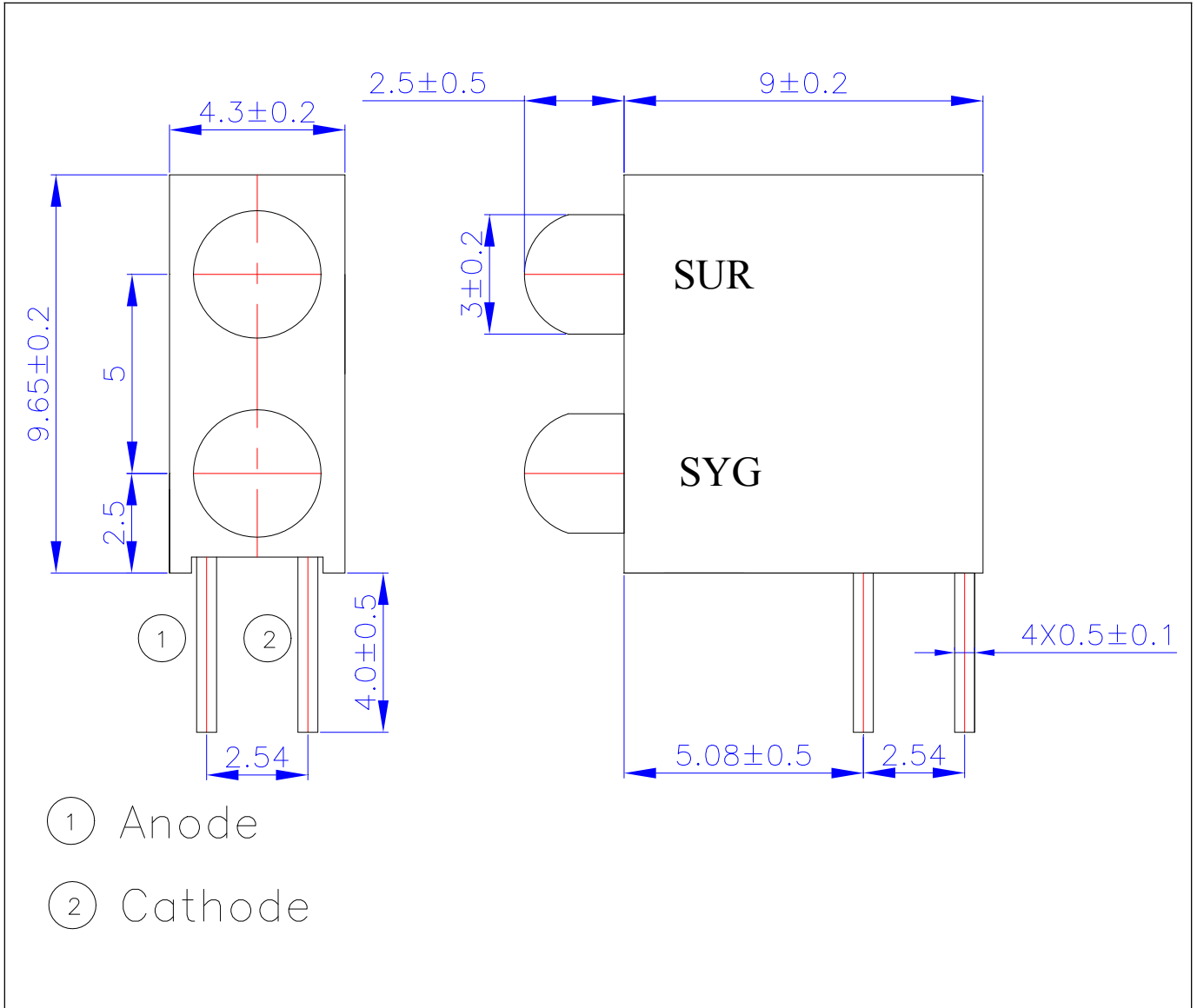
Series Name	Color Code	Remark
HV : HARVATEK	32: 2 LAMP 690: HARVATEK Part No. 230 :3.0mm Round LED Lamp SUR: AlGaInP 625nm Red Chip. SYG: AlGaInP 571 nm Green Chip	

## Features:

- Stable Color
- Popular 3.0mm through hole package.
- Red Diffused lens and Green Diffused lens.

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**Package Dimensions**



**Notes:**

1. All dimensions are millimeters.
2. Tolerance is  $\pm 0.25$  mm unless otherwise noted.
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## Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Rating	Unit	
Forward Current	I <sub>F</sub>	30	mA	
Operating Temperature	T <sub>opr</sub>	-40to+85	°C	
Storage Temperature	T <sub>stg</sub>	-40to+100	°C	
Soldering Temperature*1	T <sub>sol</sub>	260±5	°C	
Power Dissipation	P <sub>d</sub>	SUR	75	mW
		SYG	75	
Reverse Voltage	V <sub>R</sub>	5	V	
Peak Forward Current*2	I <sub>FP</sub>	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	$V_F$	$I_F=20\text{ mA}$	/	2.0	2.5	V	
Reverse Current	$I_R$	$V_R=5\text{ V}$	/	/	10	$\mu\text{A}$	
Luminous Intensity	$I_V$	$I_F=20\text{ mA}$	SUR	40	200	/	mcd
			SYG	15	60	/	
Viewing Angle	$2\theta_{1/2}$	$I_F=20\text{ mA}$	/	45	/	deg	
Peak Wavelength	$\lambda_p$	$I_F=20\text{ mA}$	SUR	627	632	/	nm
			SYG	569	574	/	
Dominant Wavelength	$\lambda_d$	$I_F=20\text{ mA}$	SUR	620	625	/	nm
			SYG	566	571	/	
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:(R)**

Iv (mcd)		
Grade	Min.	Max.
P	40	80
Q	63	125
R	100	200
S	160	320
T	250	500
U	400	800

$\lambda d$ (nm)		
Grade	Min.	Max.
1	620	623
2	622	625
3	624	627
4	626	629
5	628	631

Notes:

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

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**Specifications for Bin Grading:(G)**

Iv (mcd)		
Grade	Min.	Min.
M	15	32
N	25	50
P	40	80
Q	63	125
R	100	200
S	160	320

$\lambda d$ (nm)		
Grade	Min.	Max.
5	566	569
3	568	571
7	570	573
8	572	575
9	574	577

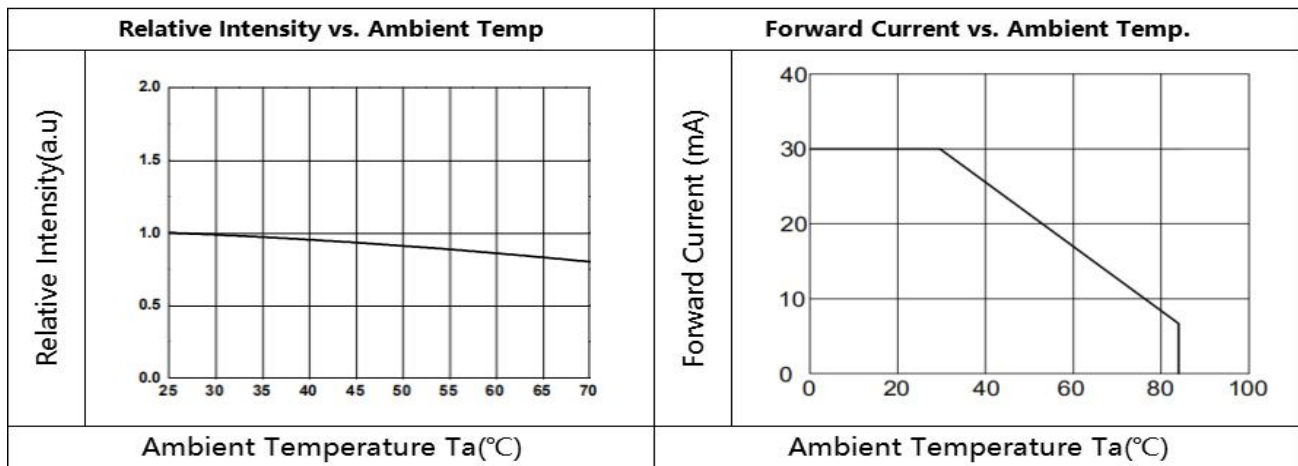
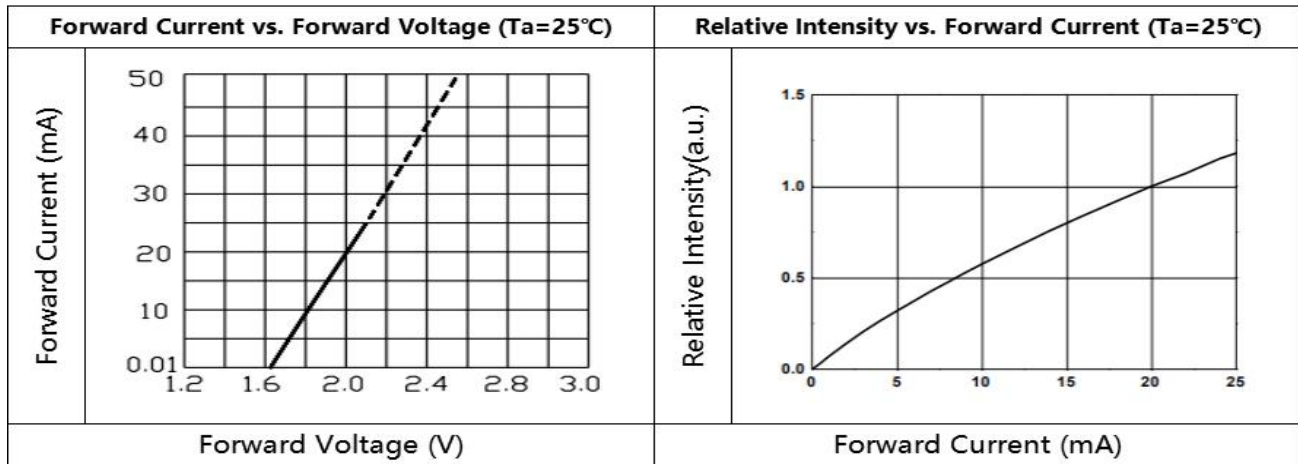
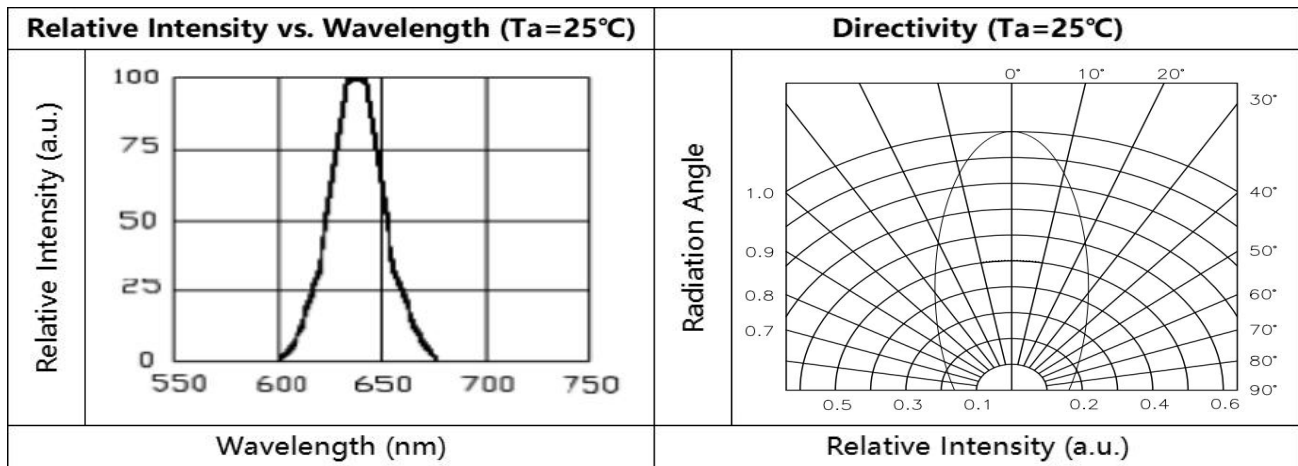
Notes:

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

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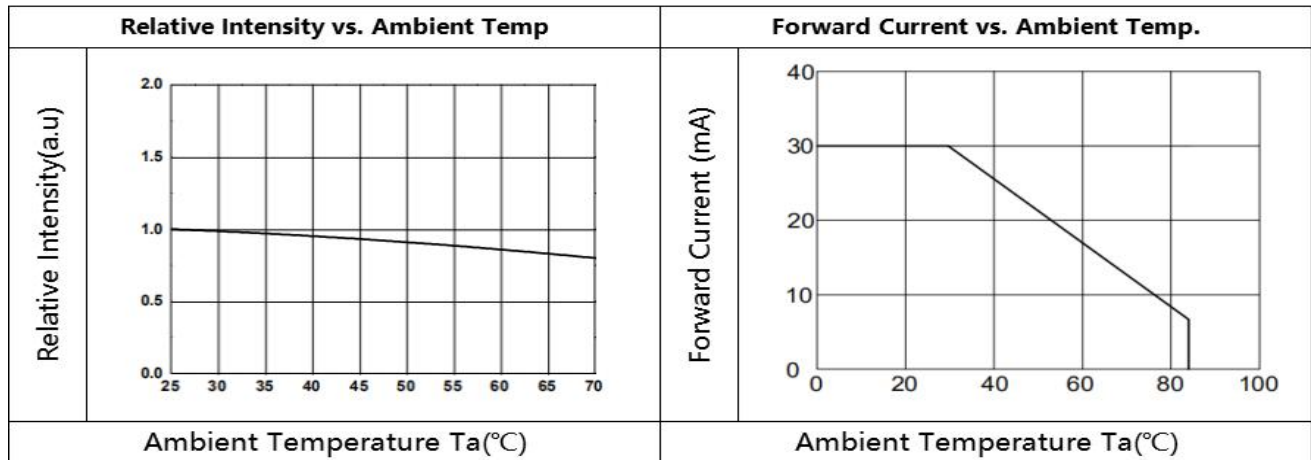
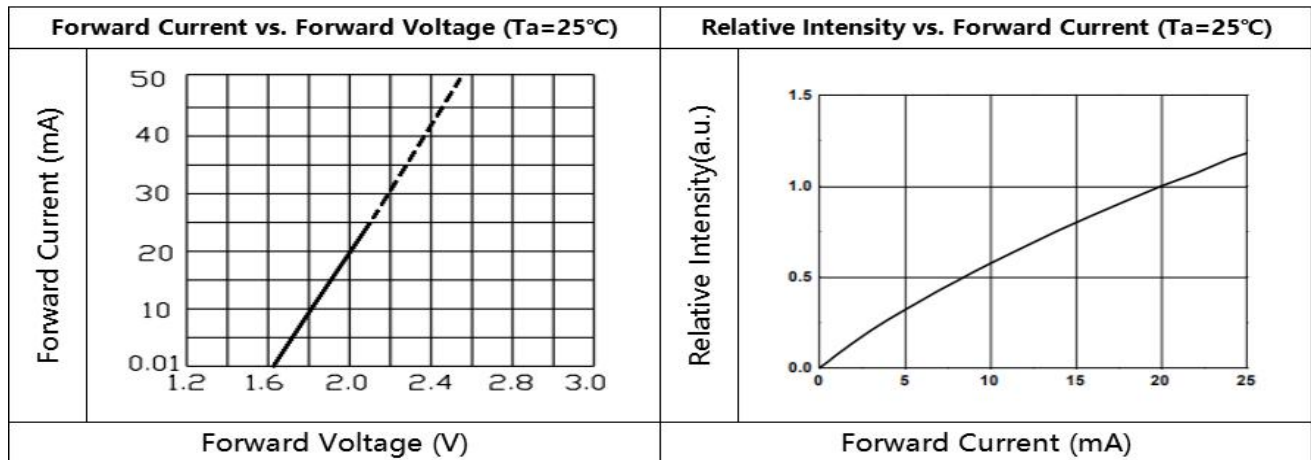
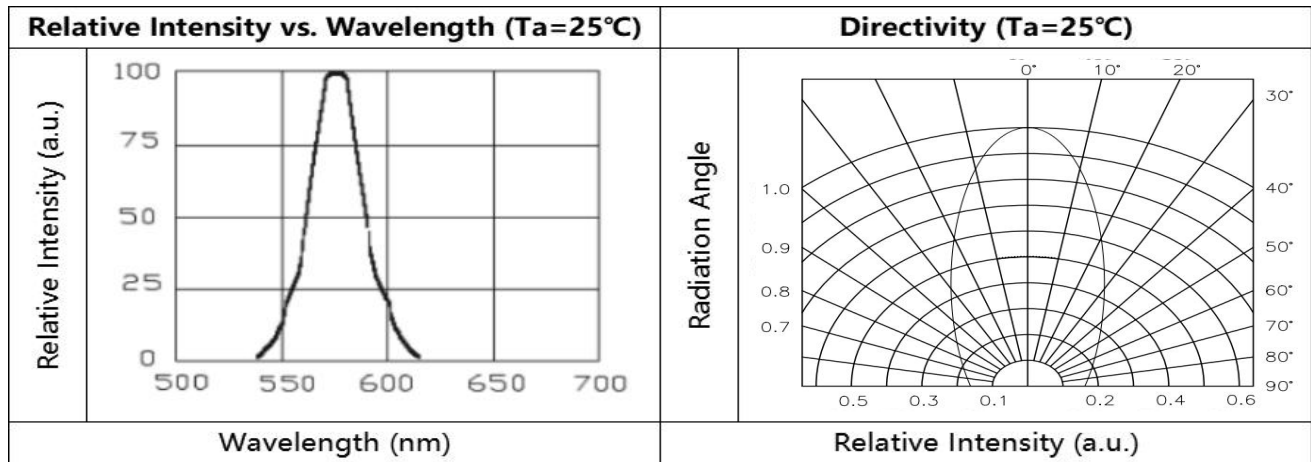


## Typical Electro-Optical Characteristics Curves(R)



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## Typical Electro-Optical Characteristics Curves(G)



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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	$I_v \cong I_{vt} * 0.5$ or $V_f \cong U$ or $V_f \cong L$	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:  $I_{vt}$ : To test  $I_v$  value of the chip before the reliability test.

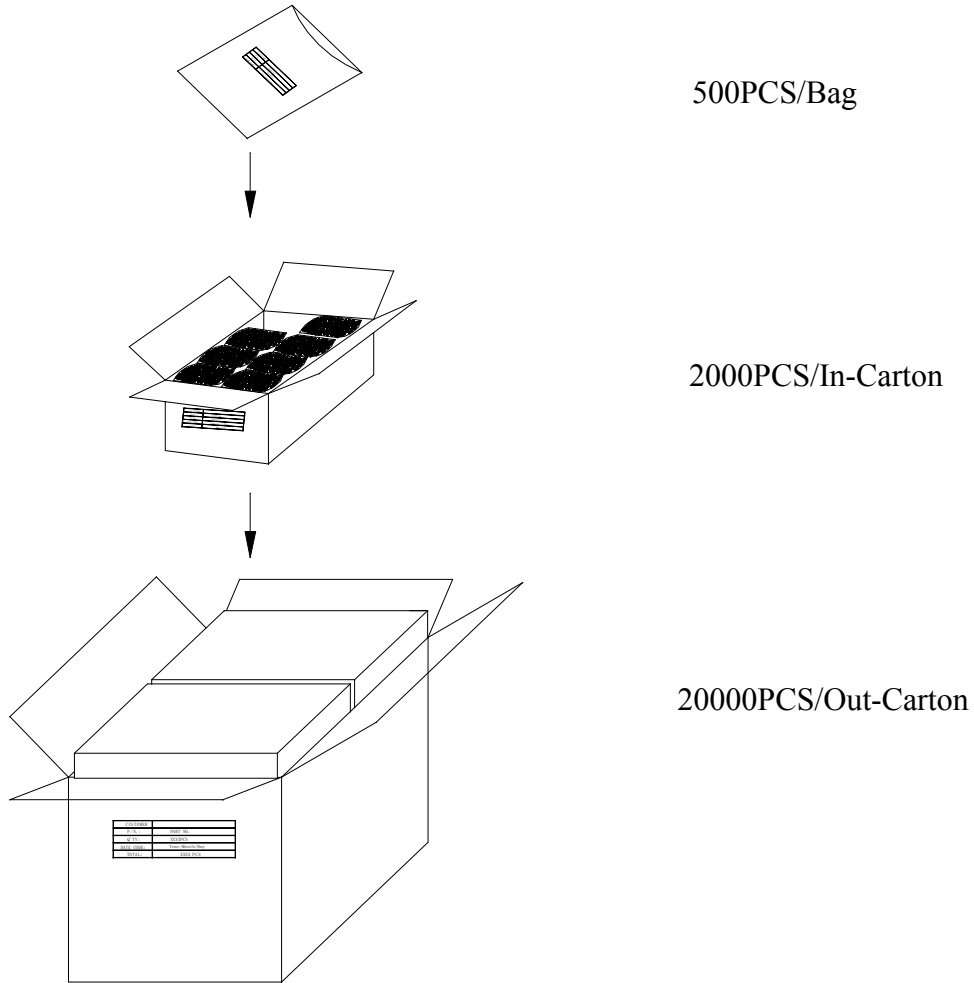
$I_v$ : The test value of the chip that has completed the reliability test

U: Upper Specification Limit

L: Lower Specification Limit

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## Packing Specification:



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**Revision History**

Revision	Page	Version No.	Revision Date
Initial Release		1.0	09-19-2018
Modifies Dominant Wavelength	6	1.2	11-11-2019

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