Harvatek 3.0mm Round LED LAMP

HV-RG22009M-L50

DISCLAIMER

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LIFE SUPPORT POLICY

HARVATEK's products are not authorized for use as critical components in life support devices or systems without the express written approval of the President of HARVATEK or HARVATEK INTERNATIONAL. As used herein:

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.

Compliance and Certification

ISO9002, QS9000 and ISO14001 Certified
RoHS Compliant

Orderable Information

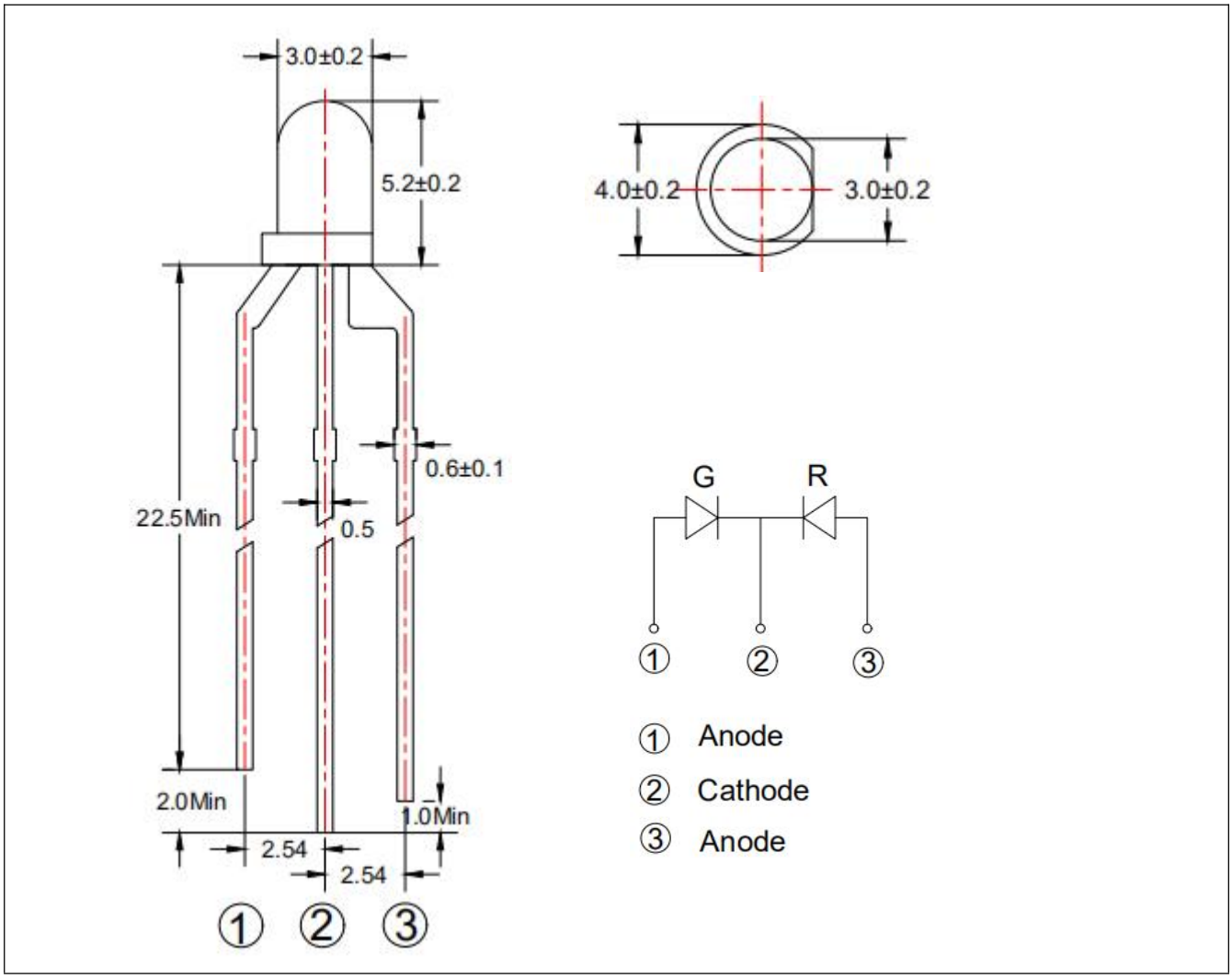
H V - RG 22009 M - L50

Series Name	Color Code	Remark
HV : **HARVATEK**	**RG22009:** **3.0mm Round LED LAMP,5.2mm Lens.** **AlGaInP 622nm Red chip** **AlGaInP 572nm Green chip** **M : White Diffused** **L50:HARVATEK Part No.**	

Features:

- Stable Color
- Popular 3.0mm through hole package, 5.2mm lens height.
- White Diffused lens.

Package Dimensions:



Notes:

1.All dimensions are millimeters.

2.Tolerance is +/-0.25mm unless otherwise noted.

3.Specifications are subject to change without notice.

Absolute Maximum Ratings at Ta=25℃

Parameter	Symbol	Rating	Unit
Forward Current	I_F	30	mA
Operating Temperature	T_{opr}	-40to+85	℃
Storage Temperature	T_{stg}	-40to+100	℃
Soldering Temperature*1	T_{sol}	260±5	℃
Reverse Voltage	V_R	5	V
Power Dissipation	P_d	80	mW
Peak Forward Current*2	I_{FP}	60	mA

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

Electrical and Optical Characteristic

Parameter	Symbol		Condition	Min.	Typ.	Max.	Unit
Luminous Intensity	I_v	R	I_F=20mA	40	150	/	mcd
		G		20	40	/	
Viewing Angle	2θ ½	R/G	I_F=20mA	/	60	/	Deg
Forward Voltage	V_F	R/G	I_F=20mA	/	2.0	2.6	V
Peak Emission Wavelength	λ_P	R	I_F=20mA	620	625	/	nm
		G		565	570	/	
Dominant Wavelength	λ_d	R	I_F=20mA	617	622	/	nm
		G		566	571	/	
Spectral Line Half-Width	Δλ	R	I_F=20mA	/	20	/	nm
		G		/	35	/	
Reverse Current	I_R	R/G	V_R= 5 V	/	/	10	μA

Notes:θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.

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

λd (nm)		
Grade	Min.	Max.
01	617	621
1	620	623
2	622	625
3	624	627
4	626	629
5	628	631

Notes:

1.Luminous intensity:+/-15%.

2.Wavelength: +/-1nm.

Specifications for Bin Grading:(G)

Iv (mcd)		
Grade	Min.	Min.
M	20	32
N	25	50
P	40	80
Q	63	125
R	100	200
S	160	320

λd (nm)		
Grade	Min.	Max.
5	566	569
6	568	571
7	570	573
8	572	575
9	574	577

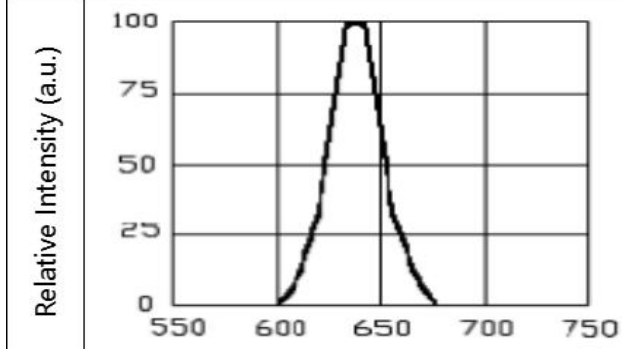
Notes:

1.Luminous intensity:+/-15%.

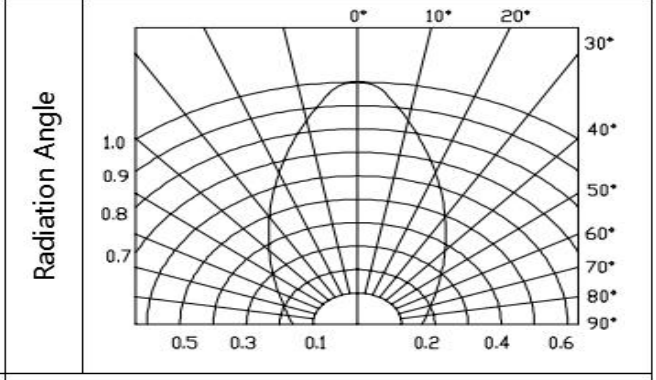
2.Wavelength: +/-1nm.

Typical Electro-Optical Characteristics Curves(R)

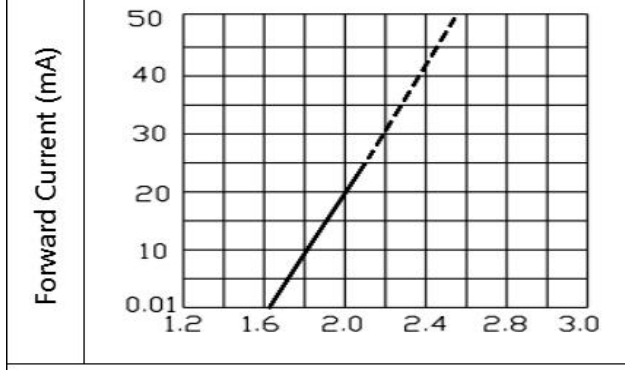
Relative Intensity vs. Wavelength (Ta=25℃)



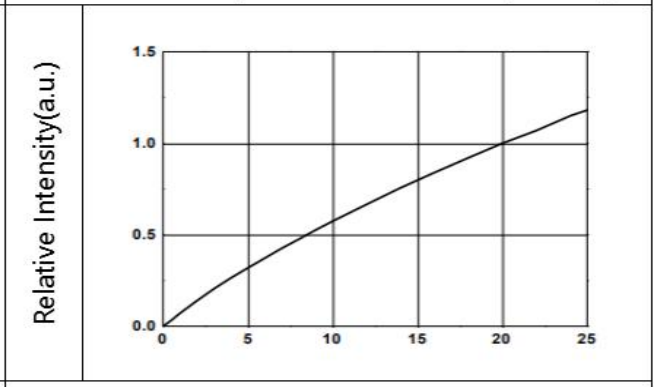
Directivity (Ta=25℃)



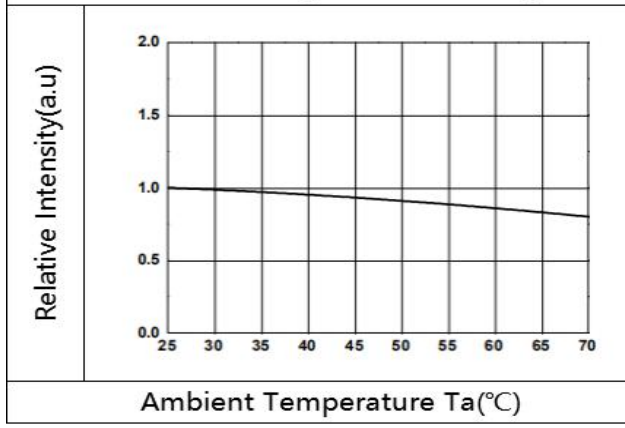
Forward Current vs. Forward Voltage (Ta=25℃)



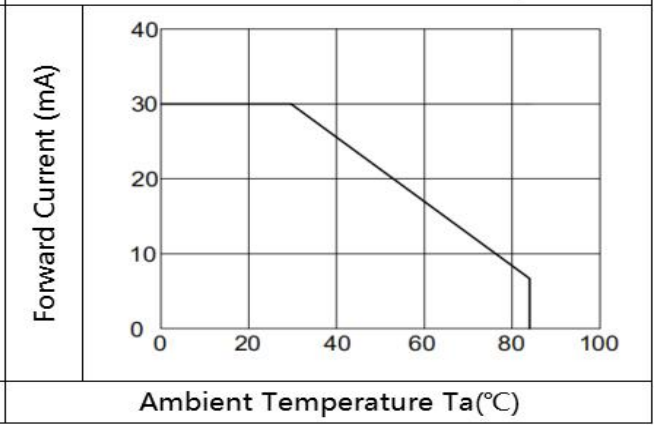
Relative Intensity vs. Forward Current (Ta=25℃)



Relative Intensity vs. Ambient Temp

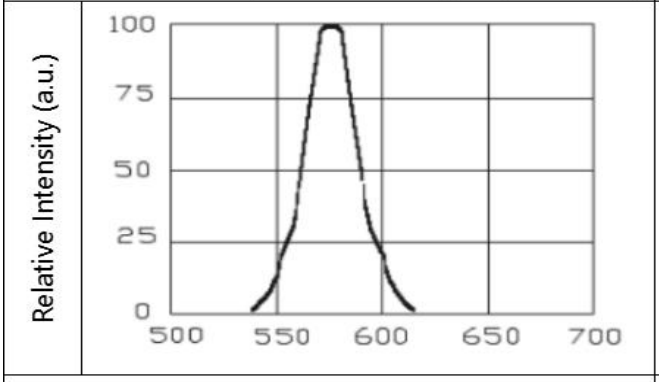


Forward Current vs. Ambient Temp.

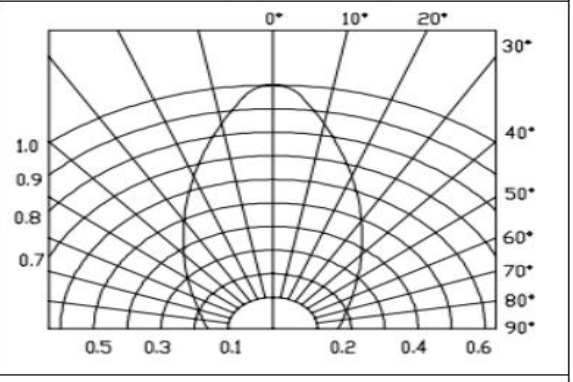


Typical Electro-Optical Characteristics Curves(G)

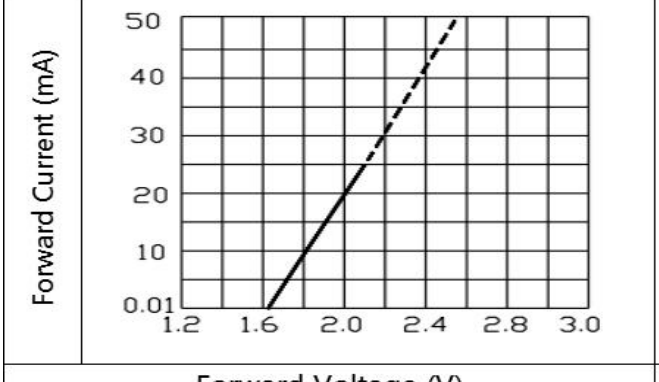
Relative Intensity vs. Wavelength (Ta=25℃)



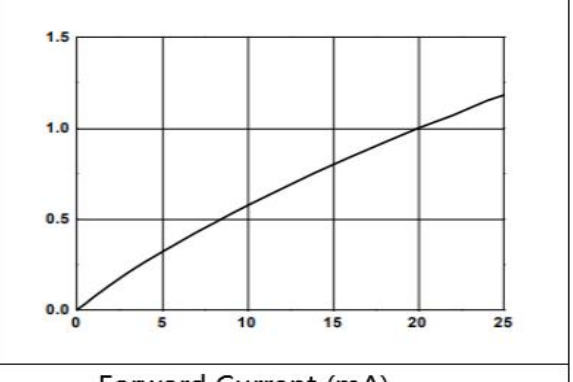
Directivity (Ta=25℃)



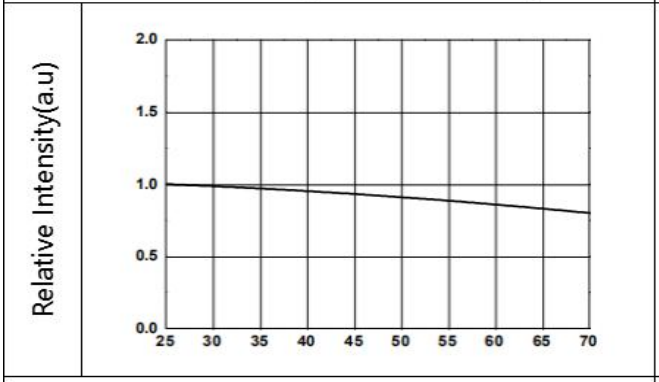
Forward Current vs. Forward Voltage (Ta=25℃)



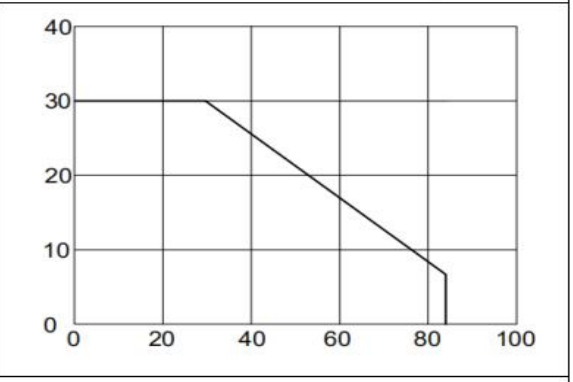
Relative Intensity vs. Forward Current (Ta=25℃)



Relative Intensity vs. Ambient Temp



Forward Current vs. Ambient Temp.



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℃±5 ℃	10 SEC	76 PCS	Iv≦Ivt*0.5 or Vf≧U or Vf≦L	0/1
2	Temperature Cycle	H:+100℃ 15min ∫ 5min L:-40℃ 15min	300 CYCLES	76 PCS		0/1
3	Thermal Shock	H:+100℃ 5min ∫ 10sec L:-10℃ 5min	300 CYCLES	76 PCS		0/1
4	High Temperature Storage	TEMP:100℃	1000 HRS	76 PCS		0/1
5	Low Temperature Storage	TEMP:-40℃	1000 HRS	76 PCS		0/1
6	DC Operating Life	TEMP:25℃ IF=20mA	1000 HRS	76 PCS		0/1
7	High Temperature / High Humidity	85℃/85%RH	1000 HRS	76 PCS		0/1

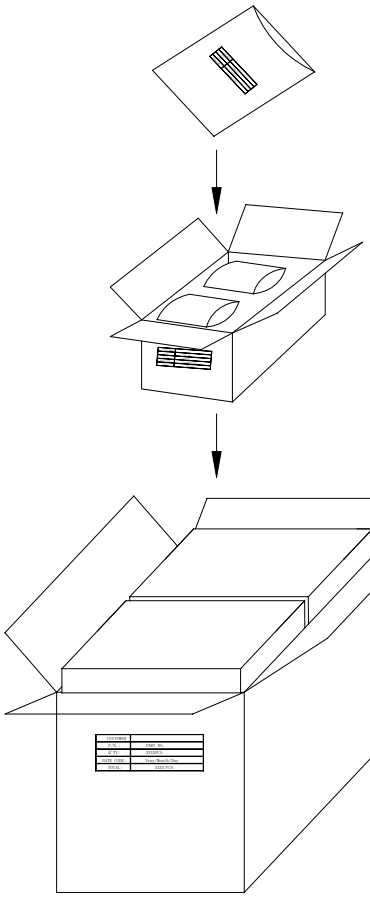
Note：Ivt：To test Iv value of the chip before the reliability test.

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

U：Upper Specification Limit

L：Lower Specification Limit

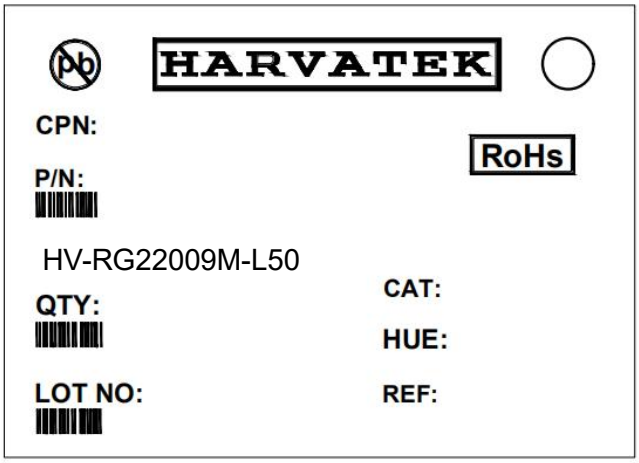
Packing Specification:



1000PCS/Bag

4000PCS/In-Carton

40000PCS/Out-Carton



Revision History

Revision	Page	Version No.	Revision Date
Initial Release		1.0	05-27-2020