

Harvatek 3.0mm Round LED LAMP**HV-46W2604M-L51**

Official Product	HV-46W2604M-L51	Customer Part No.		Data Sheet No.
	*****	*****		HV-46W2604M-L51
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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 - 46 W 2604 M - L51

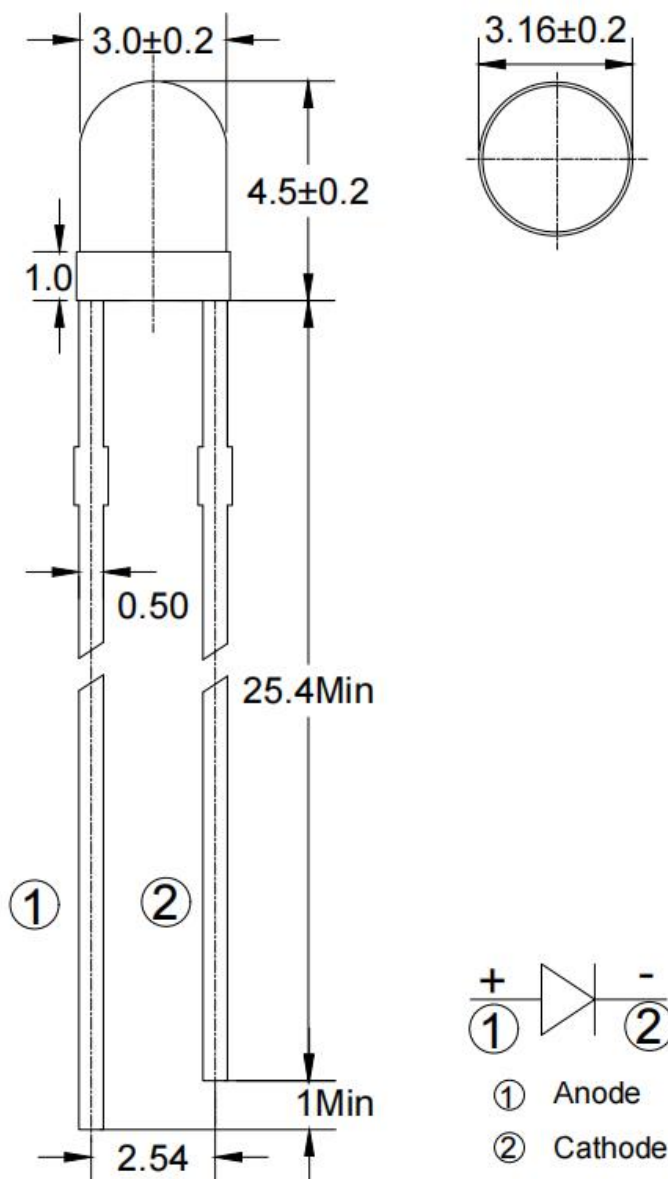
Series Name	Color Code	Remark
HV : HARVATEK	46W2604: 3.0mm Round LED LAMP,4.5mm Lens. InGaN 455nm White chip M : White Diffused L51:HARVATEK Part No.	

Features:

- Stable Color
- Popular 3.0mm through hole package, 4.5mm lens height.
- White Diffused lens

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Package Dimensions:



Notes:

1. All dimensions are millimeters.
2. Tolerance is $\pm 0.25 \text{ mm}$ unless otherwise noted.
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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+85	°C
Soldering Temperature*1	T_{sol}	260±5	°C
Power Dissipation	P_d	100	mW
Reverse Voltage	V_R	5	V
Peak Forward Current*2	I_{FP}	100	mA

*1:Soldering time \leq 5 seconds. *2 Pulse Width \leq 100 μ s and Duty \leq 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	3.4	V
Reverse Current	I_R	$V_R=5\text{ V}$	/	/	10	μA
Luminous Intensity	I_v	$I_F=20\text{ mA}$	1600	/	4500	mcd
Viewing Angle	$2\theta_{1/2}$	$I_F=20\text{ mA}$	/	100	/	deg
Chromaticity Coordinates	X	$I_F=20\text{ mA}$	/	0.34	/	/
	Y	$I_F=20\text{ mA}$	/	0.33	/	/
Spectrum Radiation Bandwidth	$\Delta\lambda$	$I_F=20\text{ mA}$	/	20	/	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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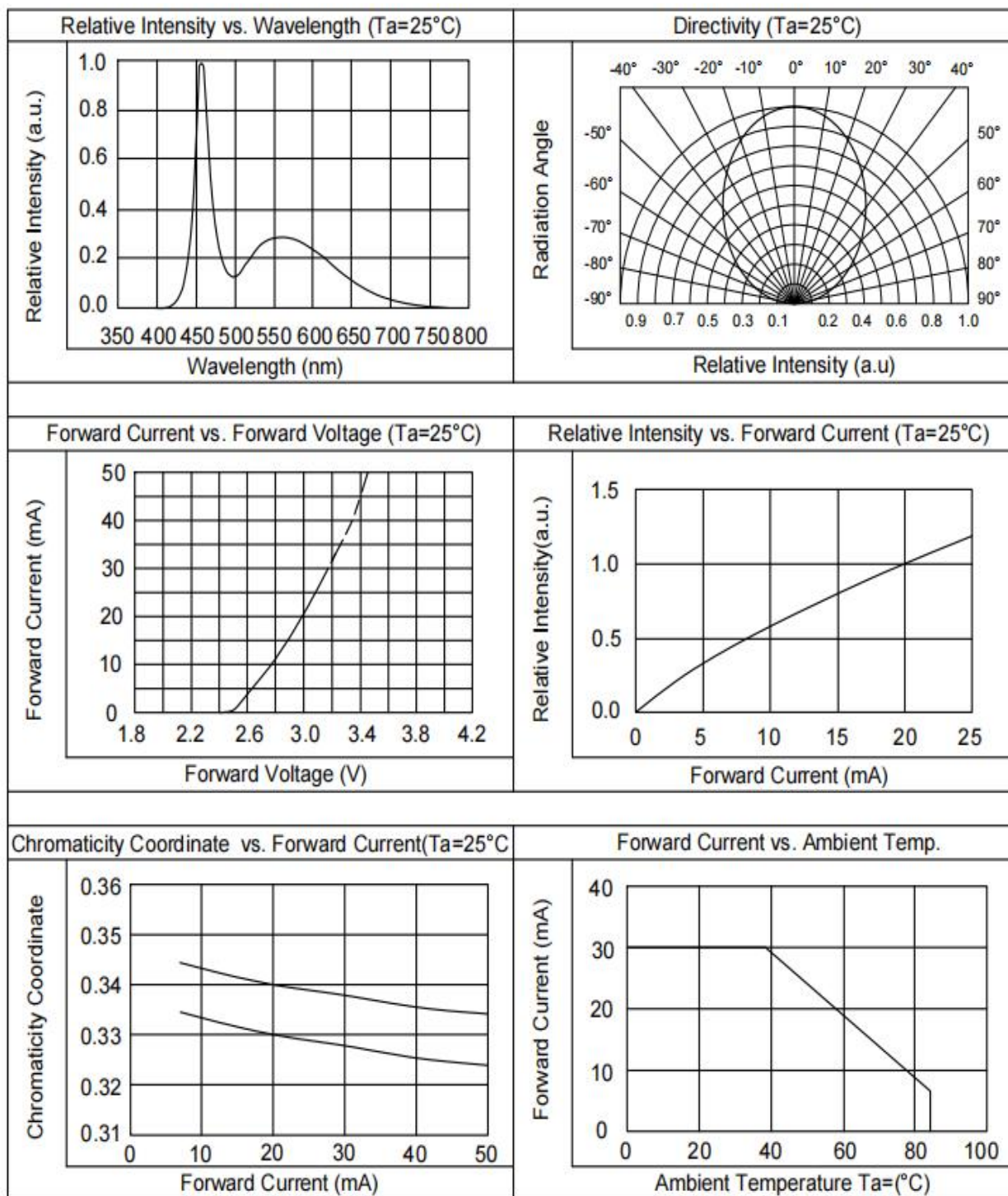
Specifications for Bin Grading:

Iv (mcd)		
X	1600	3200
Y	2500	4500

Notes:Luminous intensity: +/-15%.

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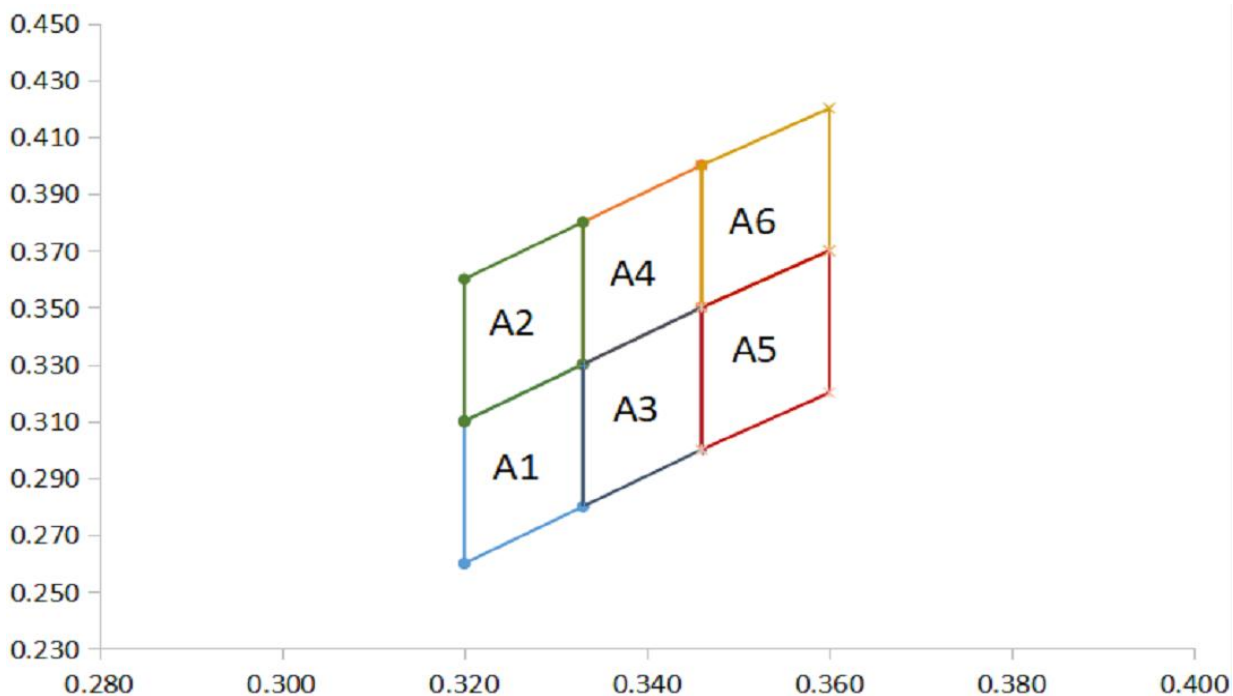
Typical Electro-Optical Characteristics Curves



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C.I.E. Chromaticity Diagram

A1	X	0.320	0.320	0.333	0.333
	Y	0.260	0.310	0.330	0.280
A2	X	0.320	0.320	0.333	0.333
	Y	0.310	0.360	0.380	0.330
A3	X	0.333	0.333	0.346	0.346
	Y	0.280	0.330	0.350	0.300
A4	X	0.333	0.333	0.346	0.346
	Y	0.330	0.380	0.400	0.350
A5	X	0.346	0.346	0.360	0.360
	Y	0.300	0.350	0.370	0.320
A6	X	0.346	0.346	0.360	0.360
	Y	0.350	0.400	0.420	0.370



Note:

1. Test current is $I_F = 20\text{mA}$
2. CIE(X, Y) coordinates for each angle measurement, the difference between the maximum measured value and the minimum measured value X can not exceed 0.04, and Y can not exceed 0.05.

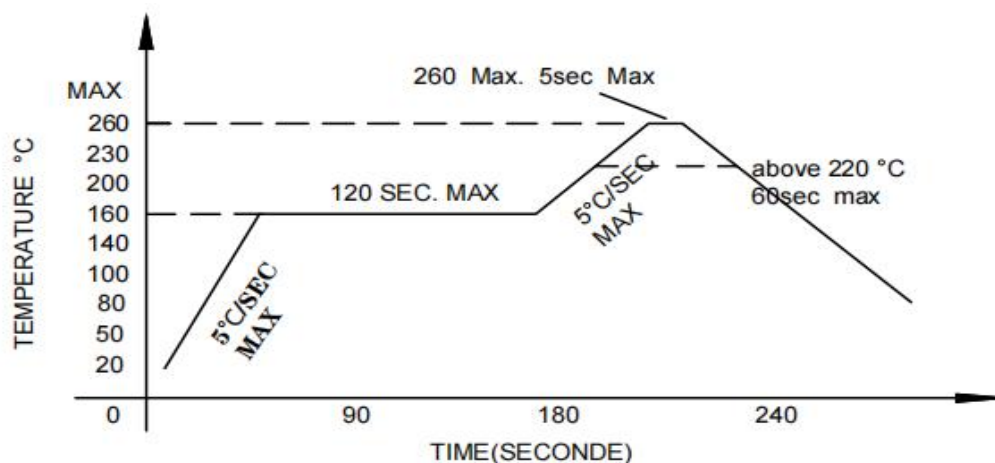
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Soldering condition

- Careful attention should be paid during soldering. When soldering, leave more than 2mm from solder joint to Led, and soldering beyond the base of the tie bar is recommended.
- Avoiding applying any stress to the lead frame while the LED are at high temperature particularly when soldering.
- Dip and hand soldering should not be done more than one time.
- After soldering the LED, the epoxy bulb should be protected from mechanical shock or vibration until the LED return to room temperature.
- A rapid-rate process is not recommended for cooling the LED down from the peak temperature.
- Although the recommended soldering conditions are specified in the above table, dip or hand soldering at the lowest possible temperature is desirable for the LED.
- Wave soldering parameter must be set and maintain according to recommended temperature and dwell time in the solder wave.

• Recommended soldering conditions

Hand Soldering		Wave Soldering	
Temp. at tip of iron	300°C Max. (30W Max.)	Preheat temp.	160°C Max. (120 sec Max.)
Soldering time	3 sec Max.	Bath temp. & time	260 Max., 5 sec Max
Distance	2mm Min.(From solder joint to Led)	Distance	2mm Min. (From solder joint to Led)



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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℃±5℃	10 SEC	76 PCS	$I_v \leq I_{vt} \times 0.5$ or $V_f \geq U$ or $V_f \leq L$	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: I_{vt} : To test I_v value of the chip before the reliability test.

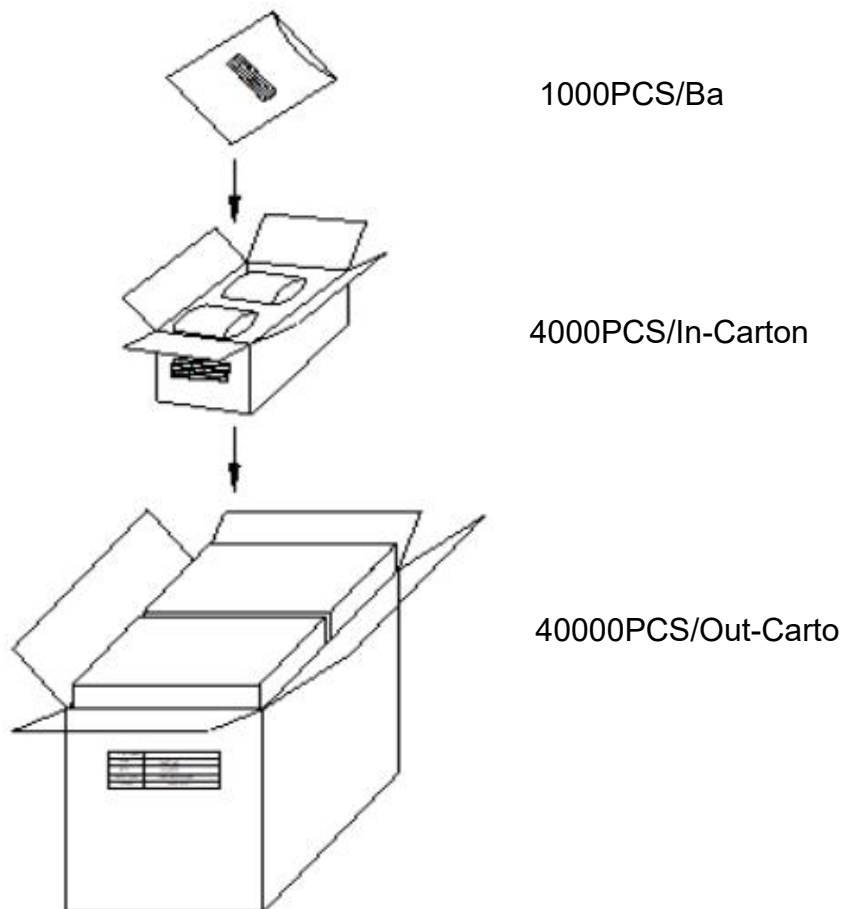
I_v : The test value of the chip that has completed the reliability test

U: Upper Specification Limit

L: Lower Specification Limit

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Packing Specification:



	HARVATEK	
CPN:		RoHs
P/N:		
HV-46W2604M-L51		
QTY:		CAT:
		HUE:
LOT NO:		REF:

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Revision History

Revision	Page	Version No.	Revision Date
Initial Release		1.0	12-17-2021
Modify color temperature		1.1	01-14-2022

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