Harvatek 5.0mm Round LED LAMP

HV-46W3304C

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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.

Compliance and Certification

ISO9002, QS9000 and ISO14001 Certified
RoHS Compliant

Orderable Information

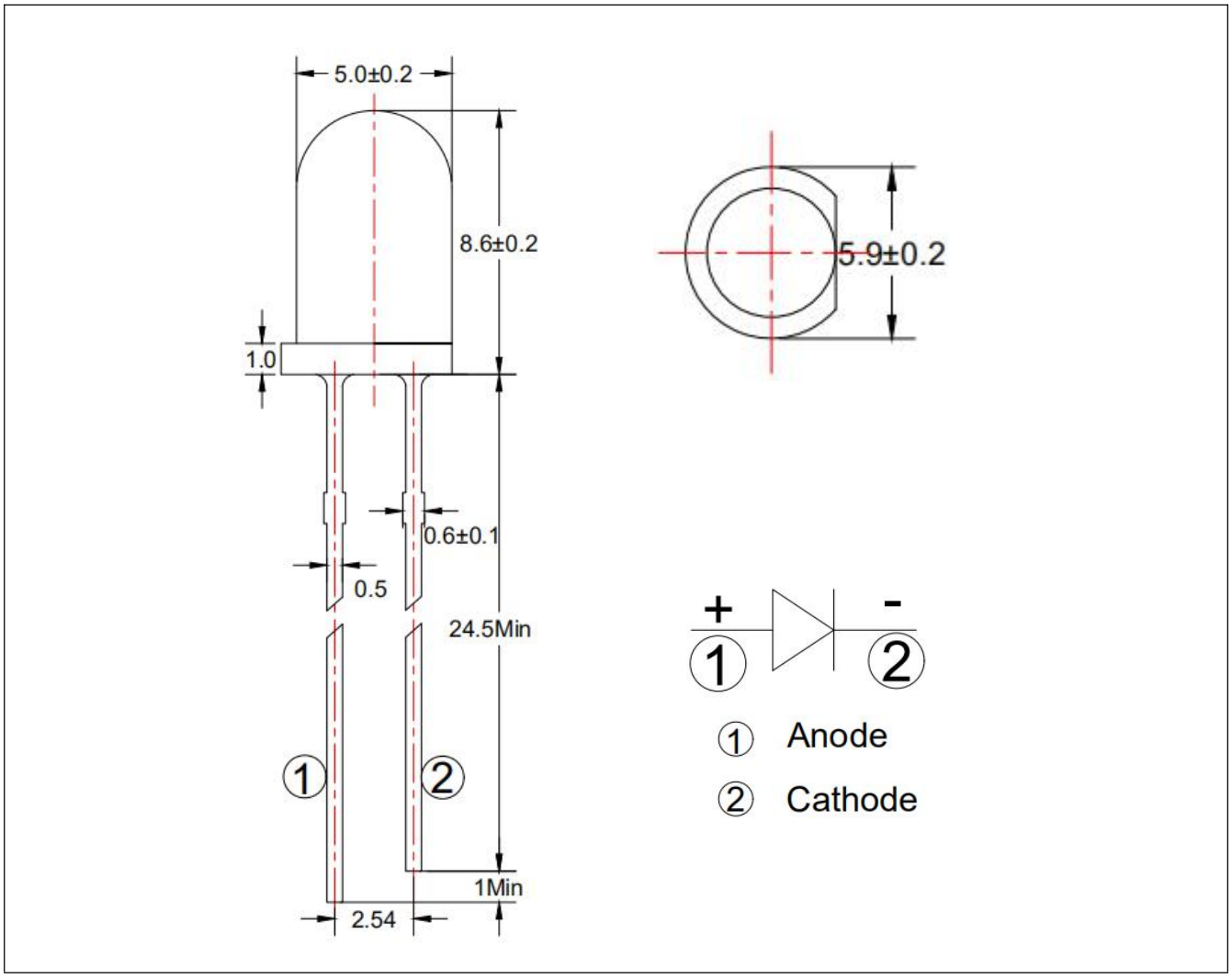
HV - 46 W 3304 C

Series Name	Color Code	Remark
HV : **HARVATEK**	**46W3304:** **5.0mm Round LED LAMP,8.6mm Lens.** **InGaN 455nm White Chip** **C : Water Clear**	

Features:

- Stable Color
- Popular 5.0mm through hole package, 8.6mm lens height.
- Water Clear 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	Topr	-40to+85	℃
Storage Temperature	Tstg	-40to+100	℃
Soldering Temperature*1	Tsol	260±5	℃
Power Dissipation	P_d	100	mW
Reverse Voltage	V_R	5	V
Peak Forward Current*2	I_{FP}	0.1	A

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

Electrical and Optical Characteristic

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F=20 mA	/	3.5	4.0	V
Reverse Current	I_R	V_R= 5 V	/	/	10	μA
Luminous Intensity	I_V	I_F=20 mA	7000	10000	/	mcd
Viewing Angle	$2\theta_{1/2}$	I_F=20 mA	/	25	/	deg
Chromaticity Coordinates	X	I_F=20 mA	/	0.29	/	/
	Y	I_F=20 mA	/	0.30	/	/
Spectrum Radiation Bandwidth	Δλ	I_F=20 mA	/	20	/	nm

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

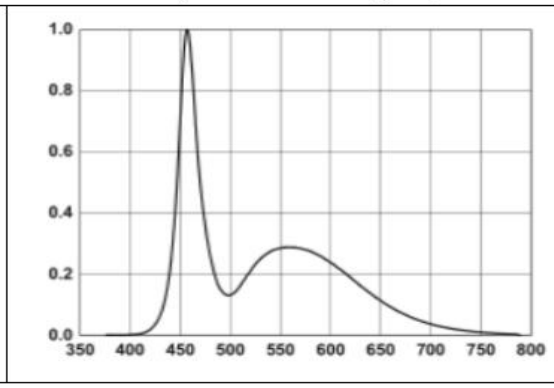
Specifications for Bin Grading:

Iv (mcd)		
Grade	Min.	Max.
Z1	7000	12000
Z2	10000	18000
Z3	15000	24000
Z4	20000	32000
Z5	25000	40000

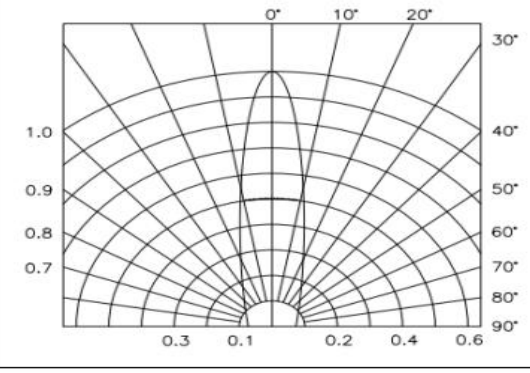
Notes:Luminous intensity:+/-15%.

Typical Electrical / Optical Characteristics Curves

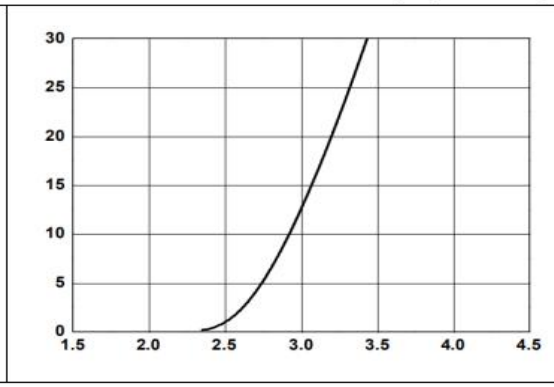
Relative Intensity vs. Wavelength (Ta=25℃)



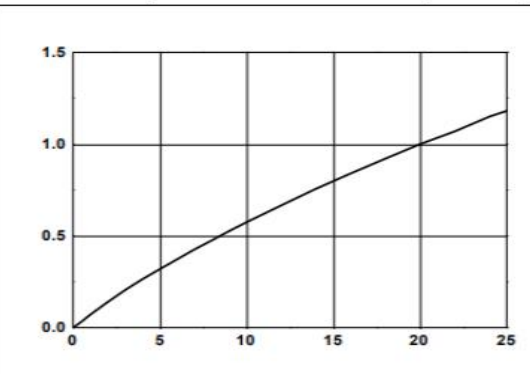
Directivity (Ta=25℃)



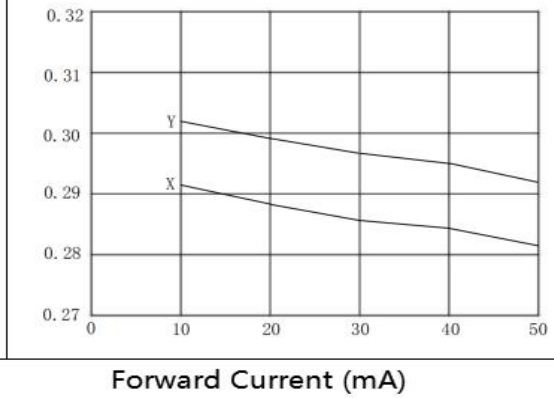
Forward Current vs. Forward Voltage (Ta=25℃)



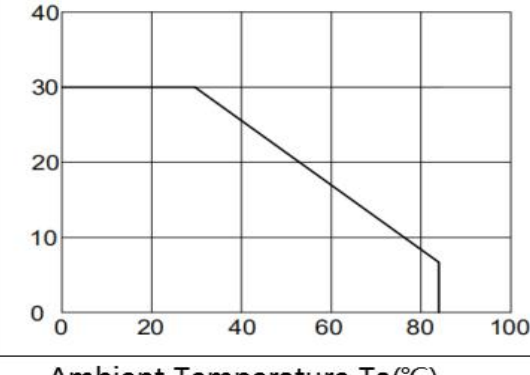
Relative Intensity vs. Forward Current (Ta=25℃)



Chromaticity Coordinate vs. Forward Current(Ta=25℃)

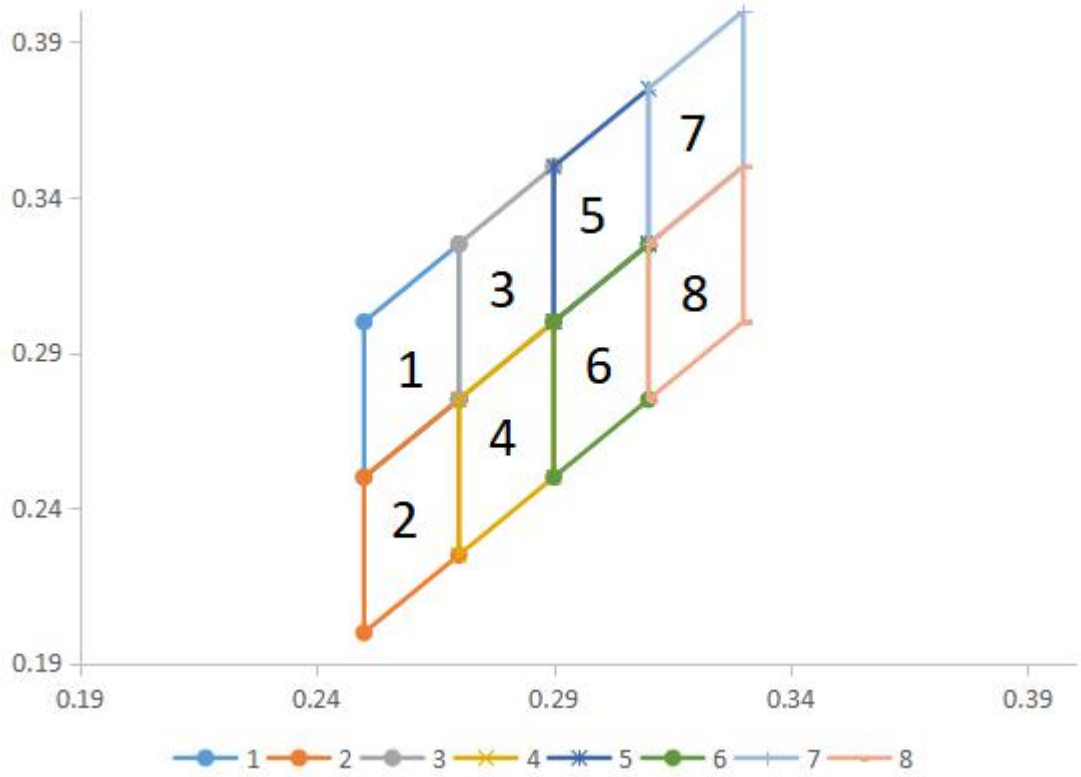


Forward Current vs. Ambient Temp.



C.I.E. Chromaticity Diagram

1	X	0.27	0.27	0.25	0.25	0.27
	Y	0.275	0.325	0.3	0.25	0.275
2	X	0.27	0.25	0.25	0.27	0.27
	Y	0.275	0.25	0.2	0.225	0.275
3	X	0.29	0.29	0.27	0.27	0.29
	Y	0.3	0.35	0.325	0.275	0.3
4	X	0.29	0.27	0.27	0.29	0.29
	Y	0.3	0.275	0.225	0.25	0.3
5	X	0.31	0.31	0.29	0.29	0.31
	Y	0.325	0.375	0.35	0.3	0.325
6	X	0.31	0.29	0.29	0.31	0.31
	Y	0.325	0.3	0.25	0.275	0.325
7	X	0.33	0.33	0.31	0.31	0.33
	Y	0.35	0.4	0.375	0.325	0.35
8	X	0.33	0.31	0.31	0.33	0.33
	Y	0.35	0.325	0.275	0.3	0.35



Note:

1.Test current is IF = 20mA

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

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

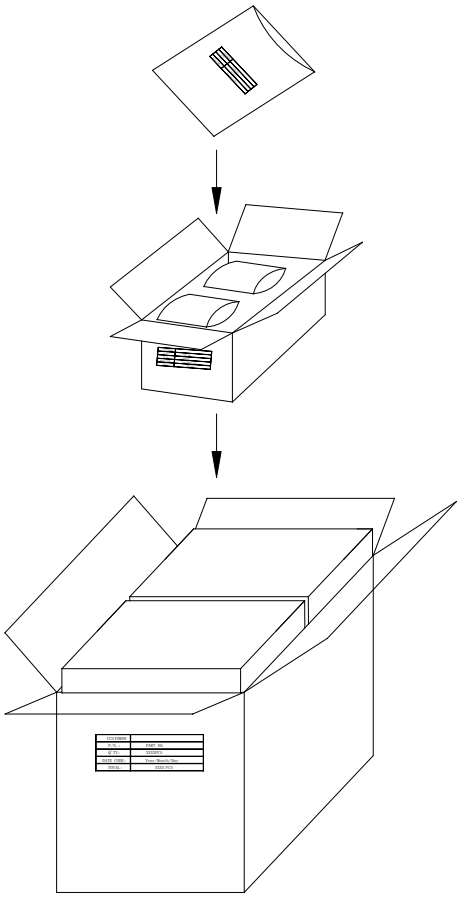
Note：Ivt：To test Iv value of the chip before the reliability test.

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

U：Upper Specification Limit

L：Lower Specification Limit

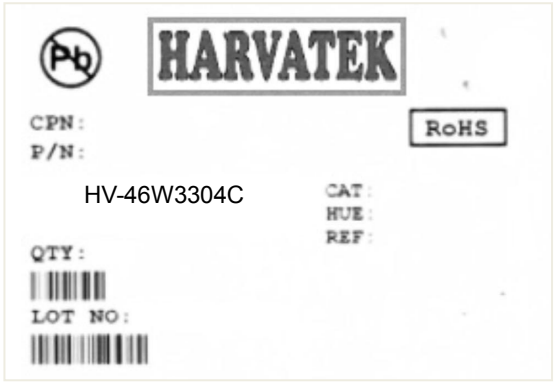
Packing Specification:



500PCS/Bag

2000PCS/In-Carton

20000PCS/Out-Carton



Revision History

Revision	Page	Version No.	Revision Date
Initial Release		1.0	10-16-2019