

Harvatek 3.0mm Round LED LAMP**HV-46W2004C-L53**

Official Product	HV-46W2004C-L53	Customer Part No.		Data Sheet No.
	*****	*****		HV-46W2004C-L53
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Apr.22. 2021	Version of 1.0	Page 1/12

DISCLAIMER

HARVATEK reserves the right to make changes without further notice to any products herein to improve reliability, function or design. HARVATEK does not assume any liability arising out of the application or use of any product or circuit described herein; neither does it convey any license under its patent rights, nor the rights of others.

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.

Official Product	HV-46W2004C-L53	Customer Part No.		Data Sheet No.
	*****	*****		HV-46W2004C-L53
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Apr.22. 2021	Version of 1.0	Page 2/12

Compliance and Certification

ISO9002, QS9000 and ISO14001 Certified

RoHS Compliant



Orderable Information

H V - 46 W 2004 C - L53

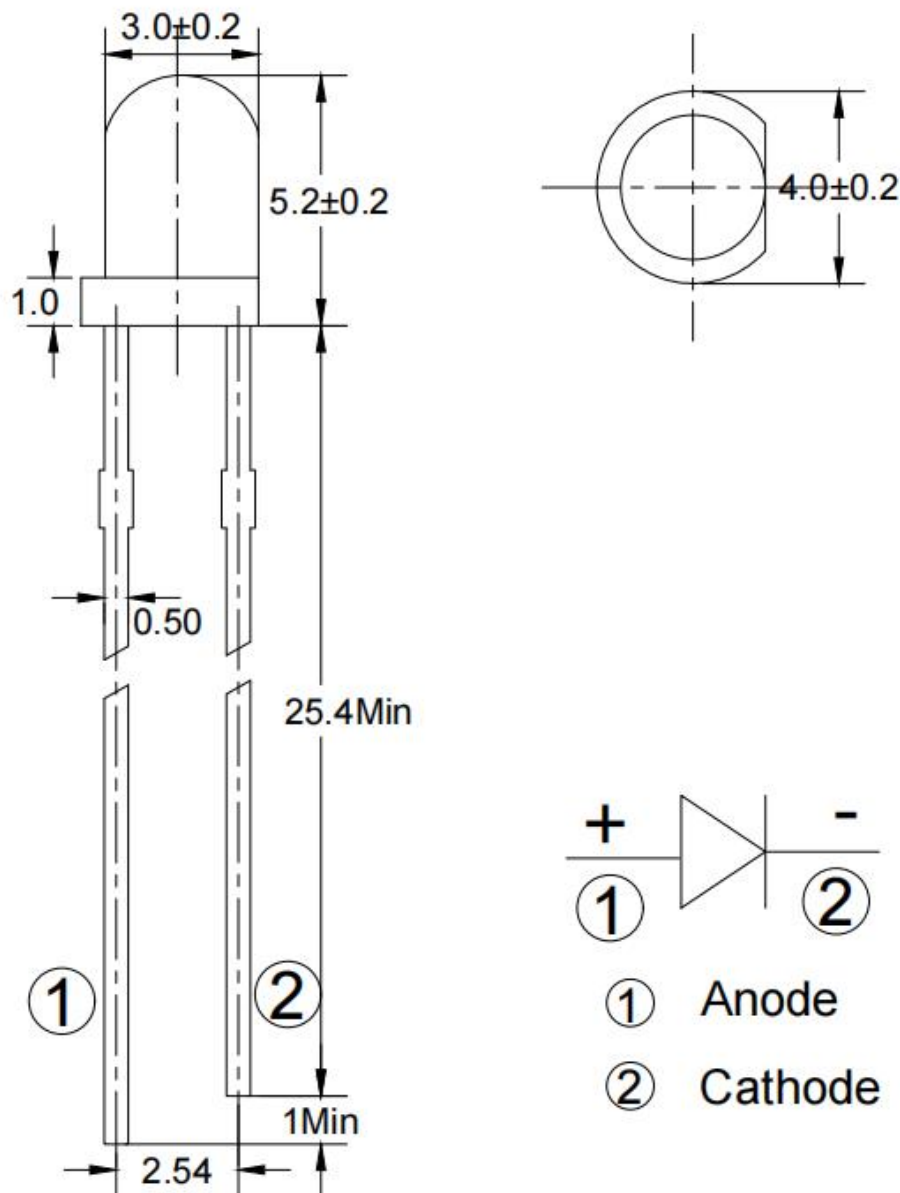
Series Name	Color Code	Remark
HV : HARVATEK	46W2004: 3.0mm Round LED LAMP,5.2mm Lens. InGaN 455nm White Chip C : Water Clear L53:HARVATEK Part No.	

Features:

- Stable Color
- Popular 3.0mm through hole package, 5.2mm lens height.
- Water Clear lens

Official Product	HV-46W2004C-L53	Customer Part No.	Data Sheet No.
	*****	*****	HV-46W2004C-L53
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Apr.22. 2021	Version of 1.0
			Page 3/12

Package Dimensions:



Notes:

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

Official Product	HV-46W2004C-L53	Customer Part No.	Data Sheet No.
	*****	*****	HV-46W2004C-L53
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Apr.22. 2021	Version of 1.0
		Page 4/12	

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. *2Pulse Width $\leq$ 100 μ s and Duty $\leq$ 1%.

Official Product	HV-46W2004C-L53	Customer Part No.		Data Sheet No.
	*****	*****		HV-46W2004C-L53
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Apr.22. 2021	Version of 1.0	Page 5/12

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	$I_F=20\text{ mA}$	2500	7500	/	mcđ
Viewing Angle	$2\theta_{1/2}$	$I_F=20\text{ mA}$	/	35	/	deg
Chromaticity Coordinates	X	$I_F=20\text{ mA}$	/	0.27	/	/
	Y	$I_F=20\text{ mA}$	/	0.26	/	/
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.

Official Product	HV-46W2004C-L53	Customer Part No.		Data Sheet No.
	*****	*****		HV-46W2004C-L53
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Apr.22. 2021	Version of 1.0	Page 6/12

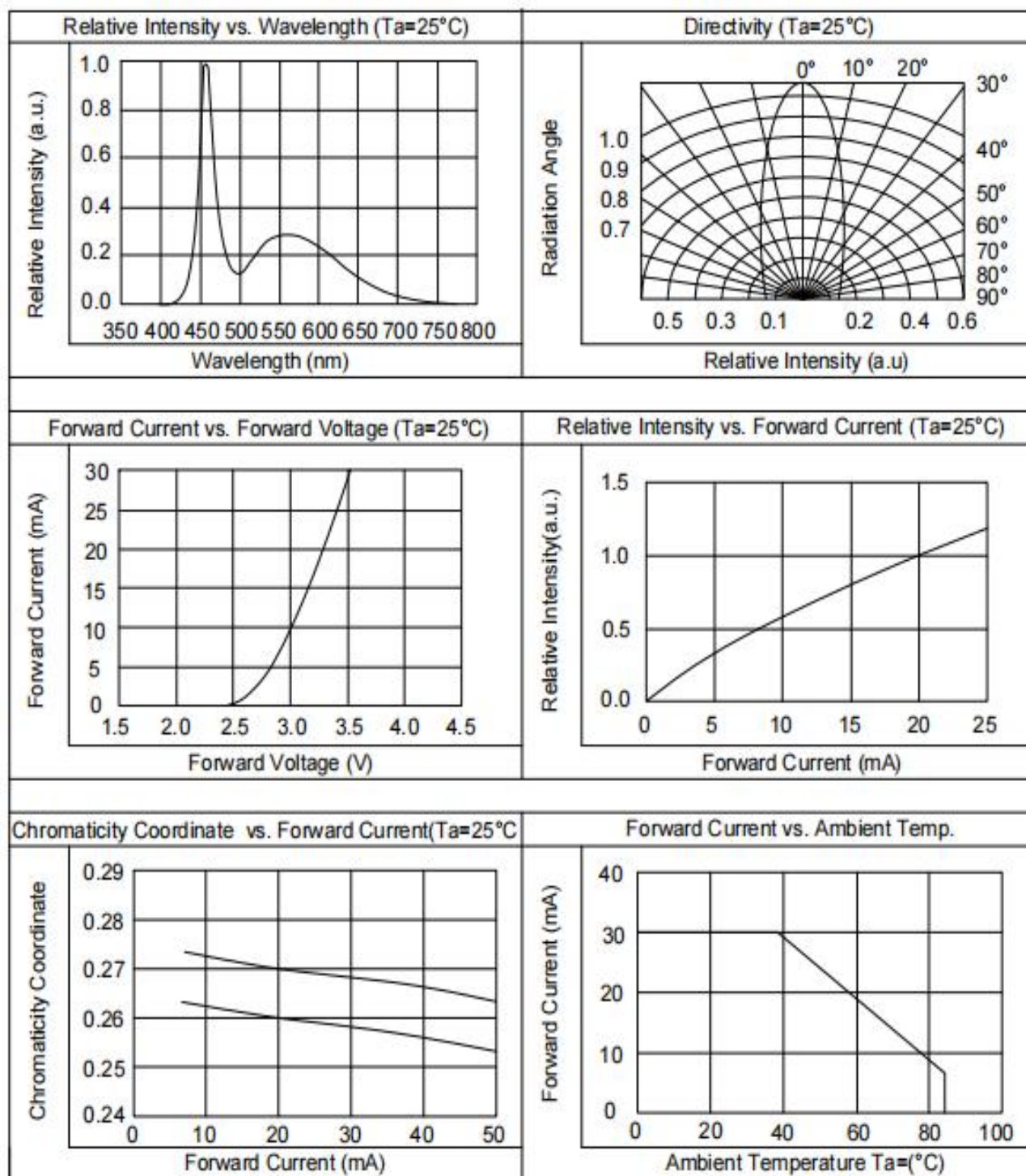
Specifications for Bin Grading:

Iv (mcd)		
Grade	Min	Max
Y	2500	4500
Z	3900	8500
Z1	6700	12000
Z2	10000	18000

Notes:Luminous intensity: +/-15%.

Official Product	HV-46W2004C-L53	Customer Part No.		Data Sheet No.
	*****	*****		HV-46W2004C-L53
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Apr.22. 2021	Version of 1.0	Page 7/12

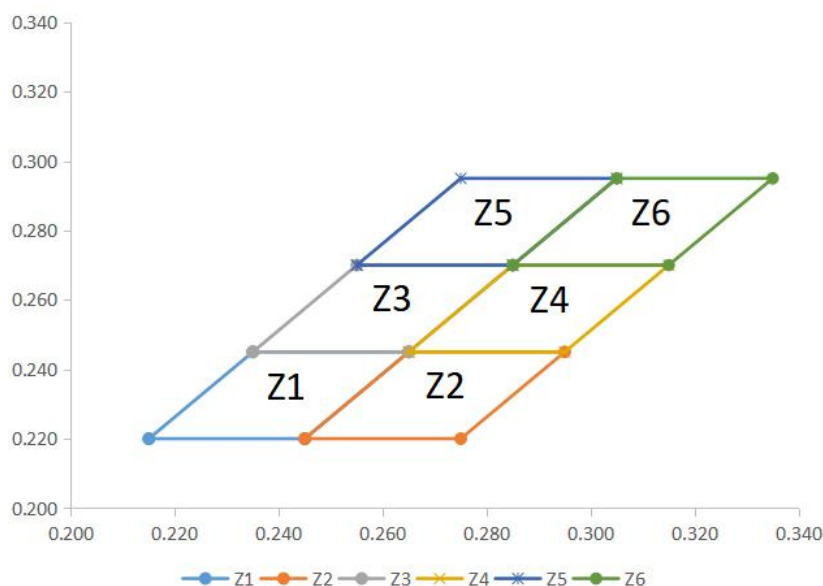
Typical Electrical / Optical Characteristics Curves



Official Product	HV-46W2004C-L53	Customer Part No.	Data Sheet No.
	*****	*****	HV-46W2004C-L53
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Apr.22. 2021	Version of 1.0
			Page 8/12

C.I.E. Chromaticity Diagram

Z1	X	0.215	0.235	0.265	0.245	0.215
	Y	0.220	0.245	0.245	0.220	0.220
Z2	X	0.245	0.265	0.295	0.275	0.245
	Y	0.220	0.245	0.245	0.220	0.220
Z3	X	0.235	0.255	0.285	0.265	0.235
	Y	0.245	0.270	0.270	0.245	0.245
Z4	X	0.265	0.285	0.315	0.295	0.265
	Y	0.245	0.270	0.270	0.245	0.245
Z5	X	0.255	0.275	0.305	0.285	0.255
	Y	0.270	0.295	0.295	0.270	0.270
Z6	X	0.285	0.305	0.335	0.315	0.285
	Y	0.270	0.295	0.295	0.270	0.270



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.

Official Product	HV-46W2004C-L53	Customer Part No.		Data Sheet No.
	*****	*****		HV-46W2004C-L53
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Apr.22. 2021	Version of 1.0	Page 9/12

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	$I_v \leq I_{vt} * 0.5$ or $V_f \geq U$ or $V_f \leq L$	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.

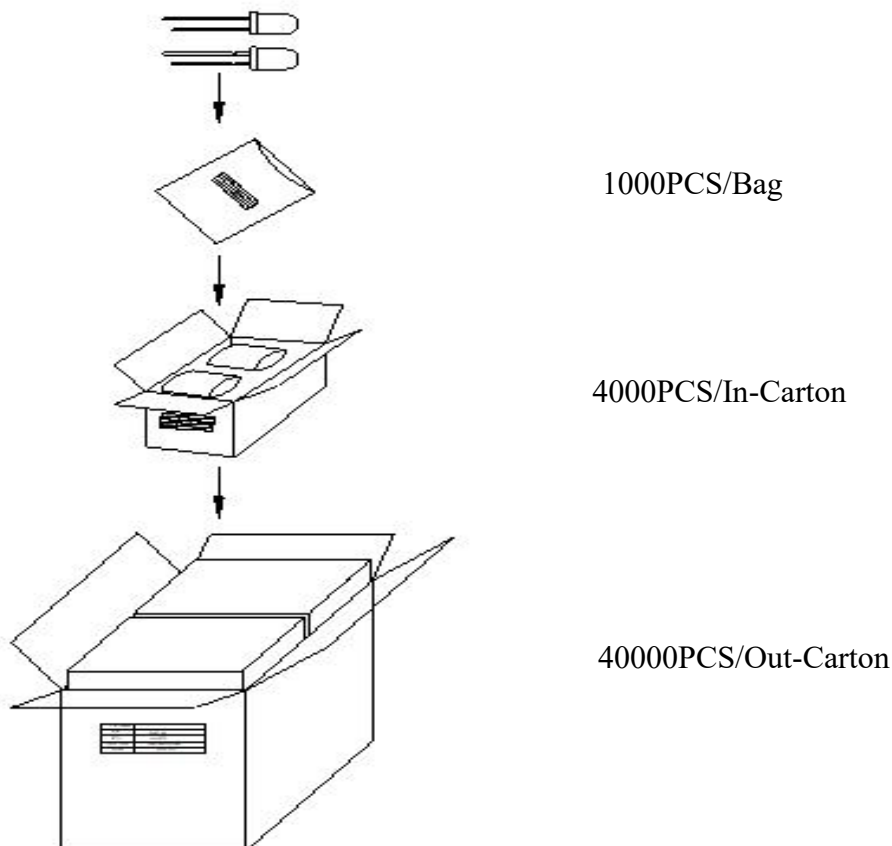
I_v : The test value of the chip that has completed the reliability test

U: Upper Specification Limit

L: Lower Specification Limit

Official Product	HV-46W2004C-L53	Customer Part No.		Data Sheet No.
	*****	*****		HV-46W2004C-L53
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Apr.22. 2021	Version of 1.0	Page 10/12

Packing Specification:



	HARVATEK	
CPN:		
P/N:		RoHS
HV-46W2004C-L53		
QTY:		CAT:
		HUE:
LOT NO:		REF:

Official Product	HV-46W2004C-L53	Customer Part No.	Data Sheet No.
	*****	*****	HV-46W2004C-L53
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Apr.22. 2021	Version of 1.0
			Page 11/12

Revision History

Revision	Page	Version No.	Revision Date
Initial Release		1.0	04-22-2021

Official Product	HV-46W2004C-L53	Customer Part No.	Data Sheet No.
	*****	*****	HV-46W2004C-L53
Specifications are subject to change without notice. Data and drawings herein are copyrighted.	Apr.22. 2021	Version of 1.0	Page 12/12