

**Harvatek 3.0mm Round IR LED LAMP****HV-94I2004C**

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Official Product	HV-94I2004C	Customer Part No.	Data Sheet No.
	*****	*****	CDAE-010-860
Specifications are subject to change without notice. Data and drawings herein are copyrighted.	May.12 2020	Version of 1.0	Page 1/11

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## **LIFE SUPPORT POLICY**

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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 - 94 | 2004 C**

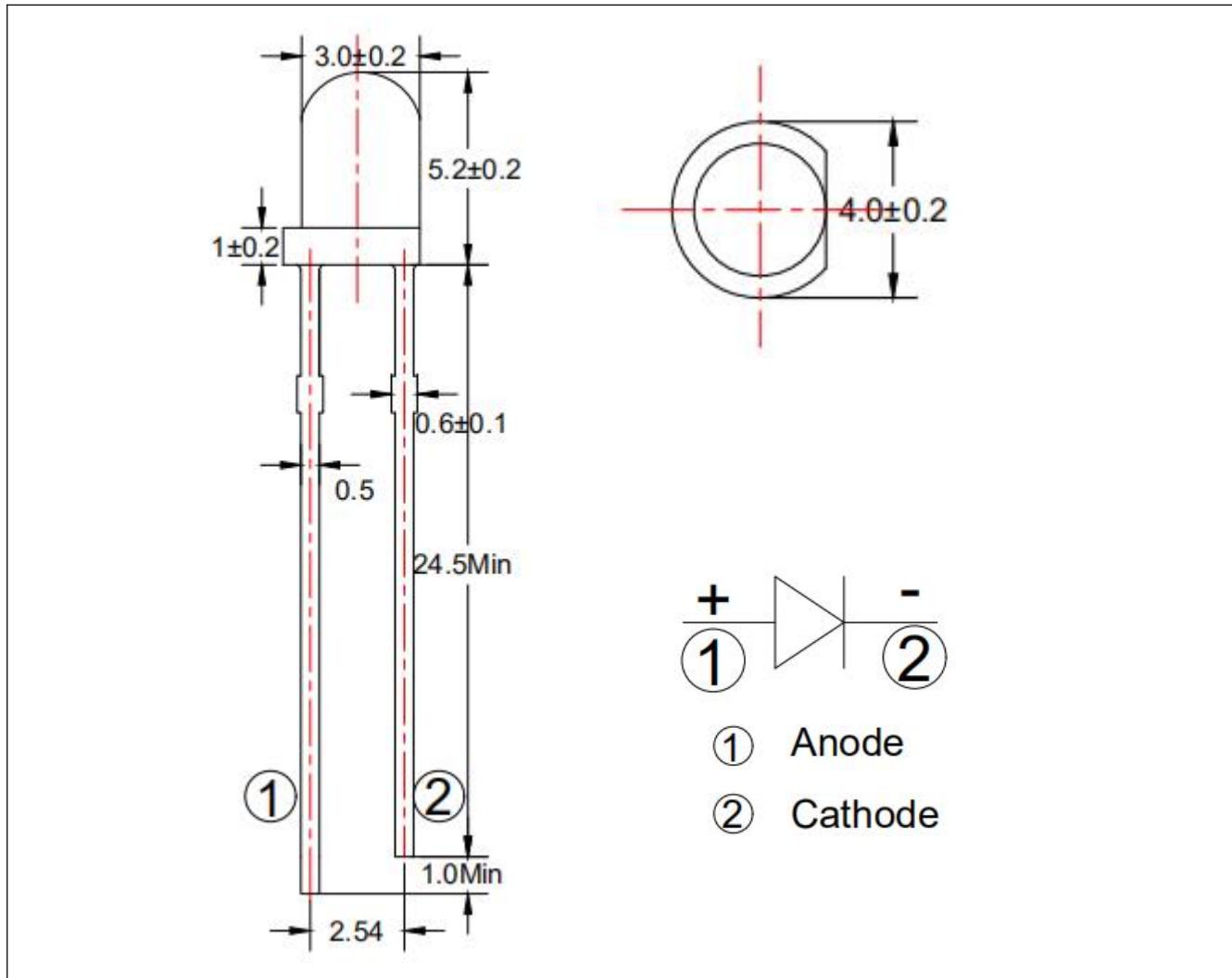


Series Name	Color Code	Remark
<b>HV :</b> <b>HARVATEK</b>	<b>94I:</b> 940nm AlGaAs IR Chip. <b>2004:</b> 3.0mm Round Lamp, 5.2mm Lens <b>C:</b> Water Clear	

## Features:

- Stable Color
- Popular 3.0mm through hole package, 5.2mm lens height.
- Water Clear 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>	50	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>	75	mW
Reverse Voltage	V <sub>R</sub>	5	V
Peak Forward Current*2	I <sub>FP</sub>	200	mA

\*1:Soldering time  $\leq$  5 seconds.\*2: Pulse Width  $\leq$  100  $\mu$  s and Duty  $\leq$  1% .

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**Electrical and Optical Characteristic**

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	$V_F$	$I_F=20$ mA	/	1.2	1.5	V
Reverse Current	$I_R$	$V_R= 5$ V	/	/	100	$\mu$ A
Radiant Intensity	$I_e$	$I_F=20$ mA	2	10	/	mW/sr
Viewing Angle	$2\theta_{1/2}$	$I_F=20$ mA	/	35	/	deg
Peak Wavelength	$\lambda_p$	$I_F=20$ mA	935	940	/	nm
Spectrum Radiation Bandwidth	$\Delta\lambda$	$I_F=20$ mA	/	45	/	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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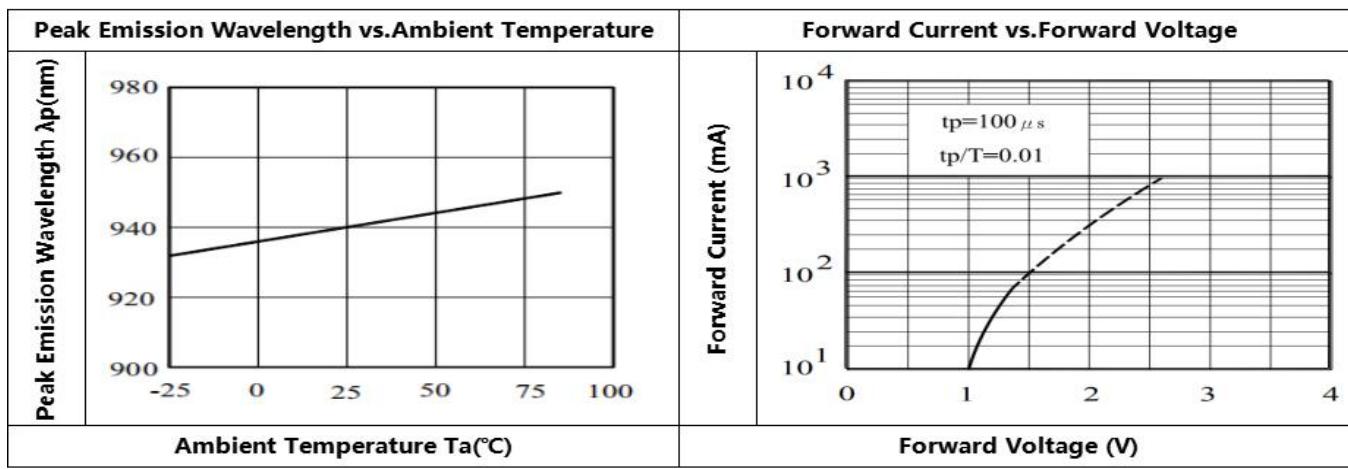
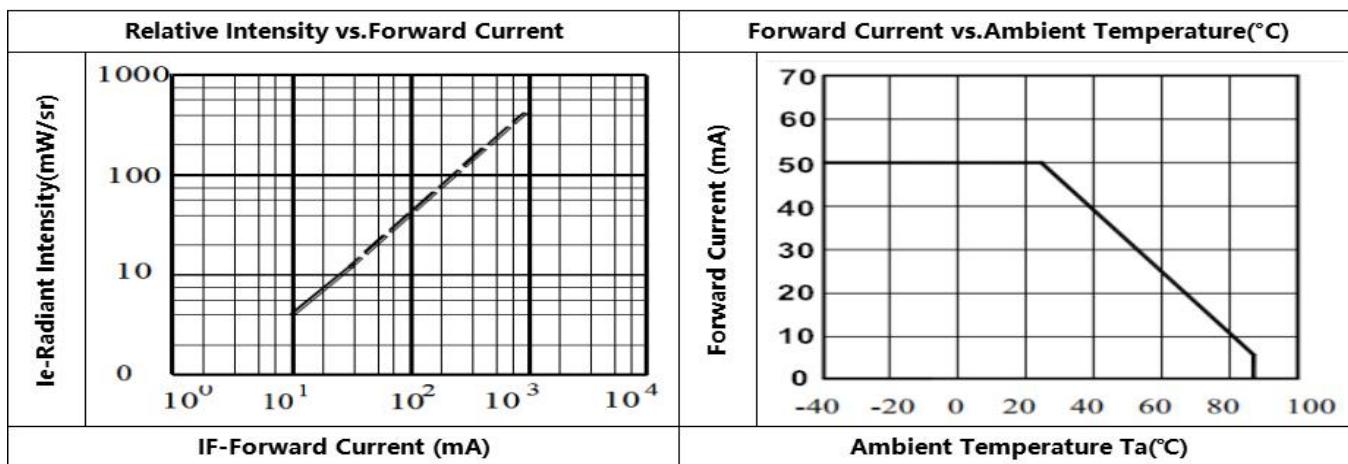
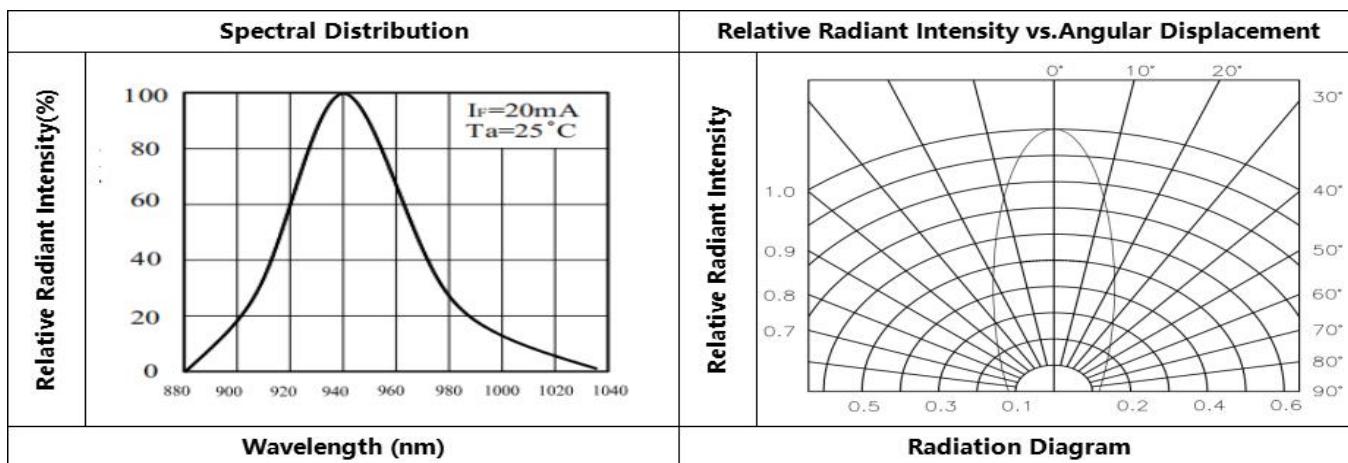
**Specifications for Bin Grading:**

Ie (mW/sr)		
Grade	Min.	Max.
I	2.0	3.5
J	2.8	4.5
K	3.7	6.8
L	5.3	9.2
M	7.5	12.8
N	10.7	18
O	14.6	26

Notes: Luminous intensity: +/-15%.

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## Typical Electro-Optical Characteristics Curves



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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	$Iv \leq Ivt^*0.5$ or $Vf \leq U$ or $Vf \leq L$	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

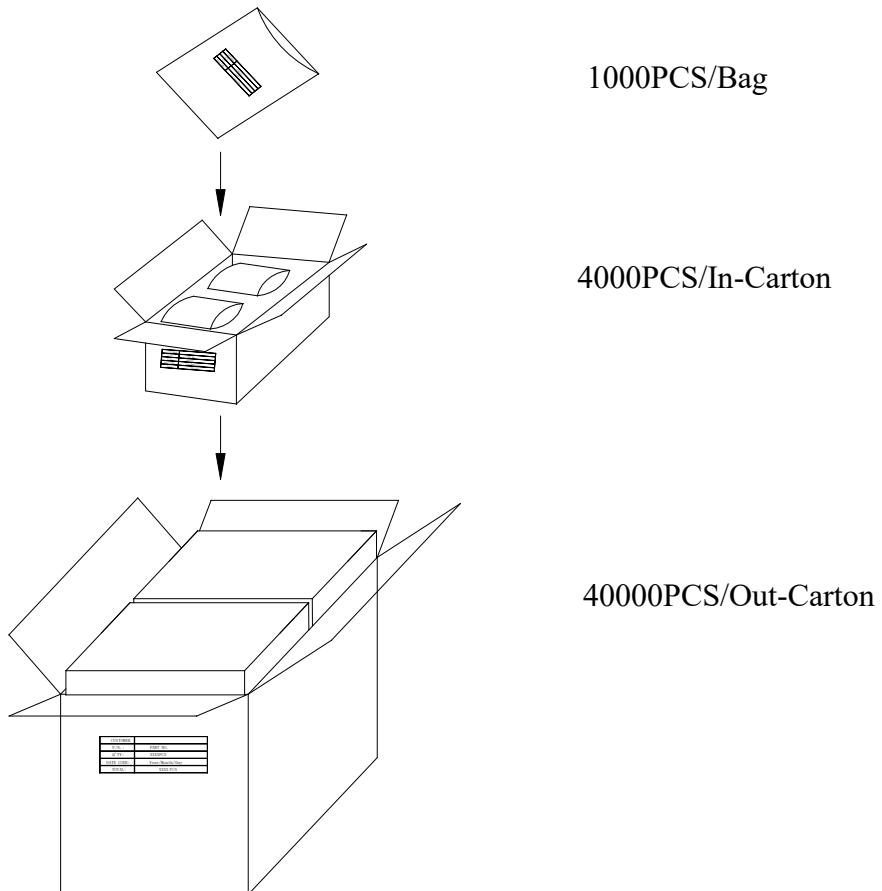
Note: Iv<sub>t</sub>: To test Iv value of the chip before the reliability test.

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

U: Upper Specification Limit

L: Lower Specification Limit

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**Packing Specification:**

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**Revision History**

Revision	Page	Version No.	Revision Date
Initial Release		1.0	05-12-2020

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