

Harvatek 3.0mm Round IR LED LAMP**HV-94I2004**

Official Product	HV-94I2004	Customer Part No.		Data Sheet No.
	*****	*****		CDAE-010-682
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov.04 2019	Version of 1.0	Page 1/11

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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.

Official Product	HV-94I2004	Customer Part No.		Data Sheet No.
	*****	*****		CDAE-010-682
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov.04 2019	Version of 1.0	Page 2/11

Compliance and Certification

ISO9002, QS9000 and ISO14001 Certified

RoHS Compliant



Orderable Information

HV - 94 I 2004



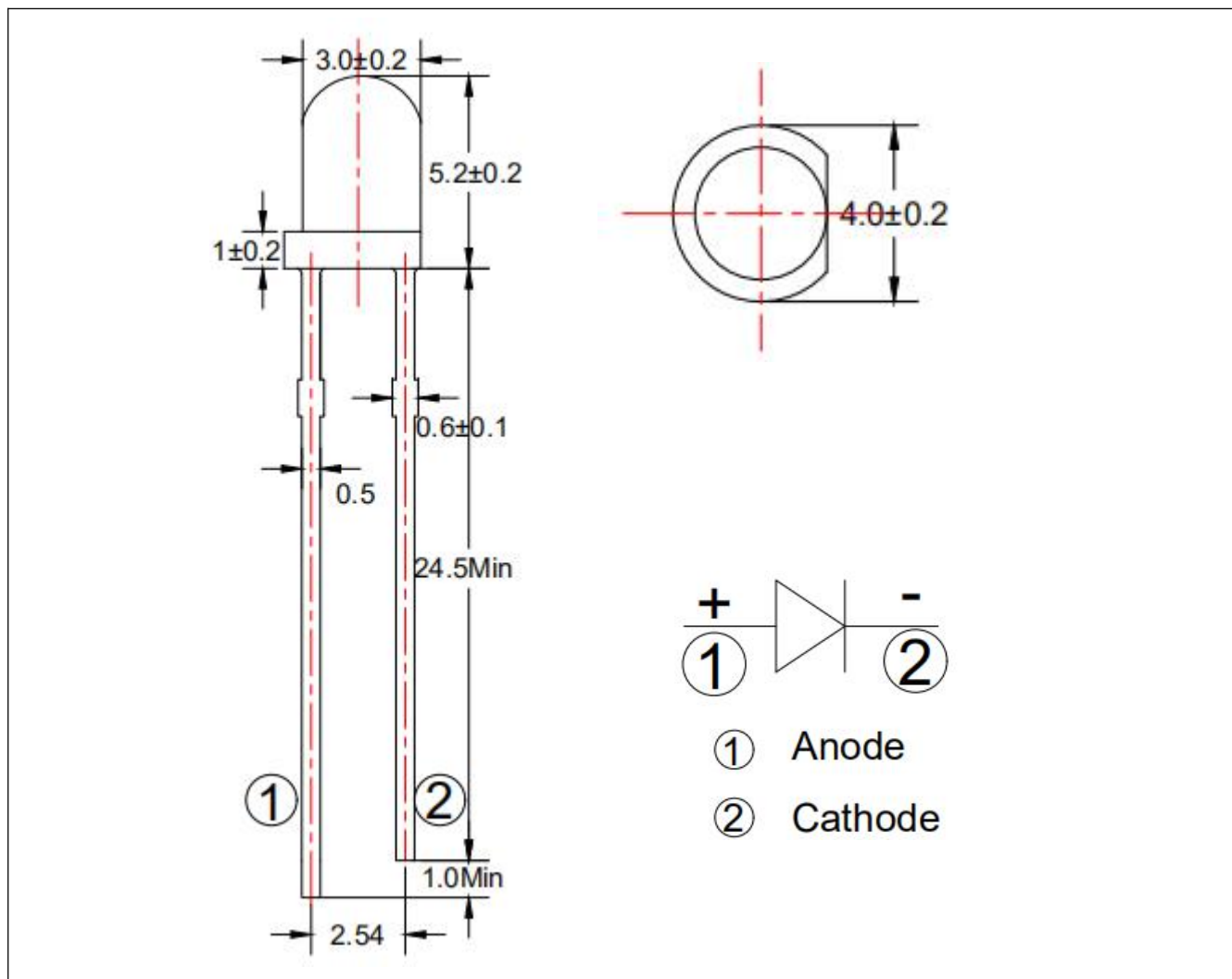
Series Name	Color Code	Remark
HV : HARVATEK	94I: 940nm AlGaAs IR Chip. 2004: 3.0mm Round Lamp, 5.2mm Lens	

Features:

- Stable Color
- Popular 3.0mm through hole package, 5.2mm lens height.
- Blue Transparent lens

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	*****	*****	CDAE-010-682
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			Page 3/11

Package Dimensions:



Notes:

1. All dimensions are millimeters.
2. Tolerance is $\pm 0.25 \text{mm}$ unless otherwise noted.
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Official Product	HV-94I2004	Customer Part No.	Data Sheet No.
	*****	*****	CDAE-010-682
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		Page 4/11	

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Rating	Unit
Forward Current	I _F	50	mA
Operating Temperature	T _{opr}	-40to+85	°C
Storage Temperature	T _{stg}	-40to+100	°C
Soldering Temperature*1	T _{sol}	260±5	°C
Power Dissipation	P _d	75	mW
Reverse Voltage	V _R	5	V
Peak Forward Current*2	I _{FP}	200	mA

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

Official Product	HV-94I2004	Customer Part No.		Data Sheet No.
	*****	*****		CDAE-010-682
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov.04 2019	Version of 1.0	Page 5/11

Electrical and Optical Characteristic

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	$I_F=20\text{ mA}$	/	1.2	1.5	V
Reverse Current	I_R	$V_R=5\text{ V}$	/	/	100	μA
Radiant Intensity	I_e	$I_F=20\text{ mA}$	2	9	/	mW/sr
Viewing Angle	$2\theta_{1/2}$	$I_F=20\text{ mA}$	/	40	/	deg
Peak Wavelength	λ_p	$I_F=20\text{ mA}$	935	940	/	nm
Spectrum Radiation Bandwidth	$\Delta\lambda$	$I_F=20\text{ mA}$	/	45	/	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-94I2004	Customer Part No.		Data Sheet No.
	*****	*****		CDAE-010-682
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov.04 2019	Version of 1.0	Page 6/11

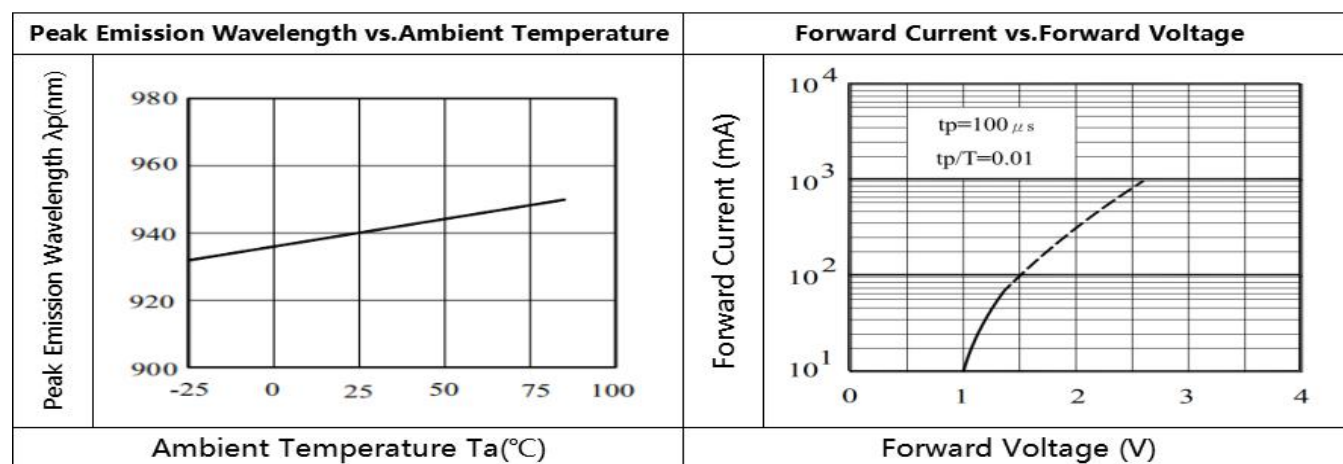
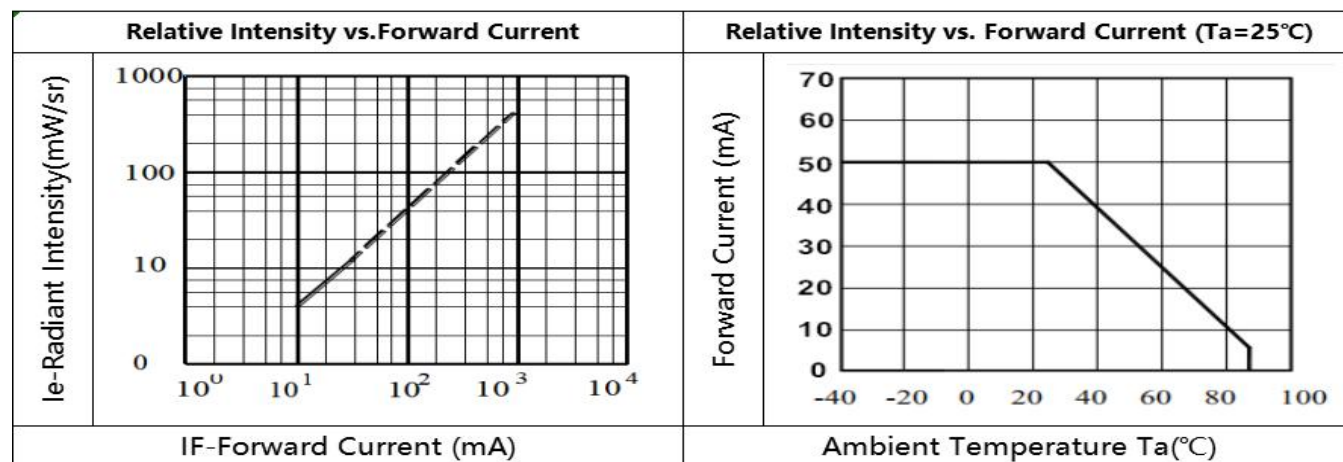
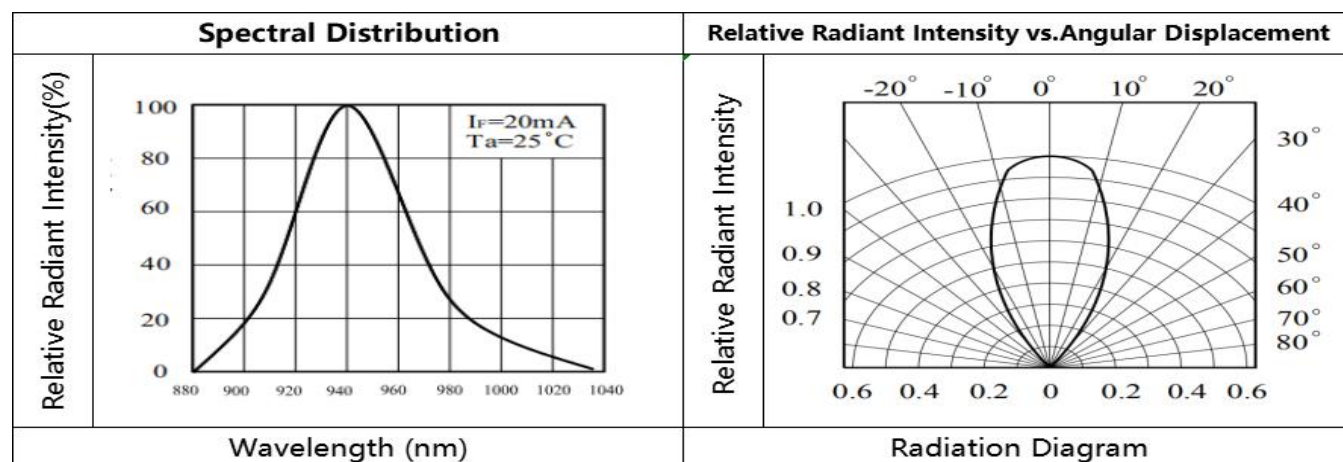
Specifications for Bin Grading:

I _e (mcd)		
Grade	Min.	Max.
N	2.0	3.5
O	2.8	4.5
P	3.7	6.8
Q	5.3	9.2
R	7.5	12.8
N	10.7	18
O	14.6	26
P	19	36

Notes: Luminous intensity: +/-15%.

Official Product	HV-94I2004	Customer Part No.		Data Sheet No.
	*****	*****		CDAE-010-682
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov.04 2019	Version of 1.0	Page 7/11

Typical Electro-Optical Characteristics Curves



Official Product	HV-94I2004	Customer Part No.	Data Sheet No.
	*****	*****	CDAE-010-682
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov.04 2019	Version of 1.0
		Page 8/11	

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.

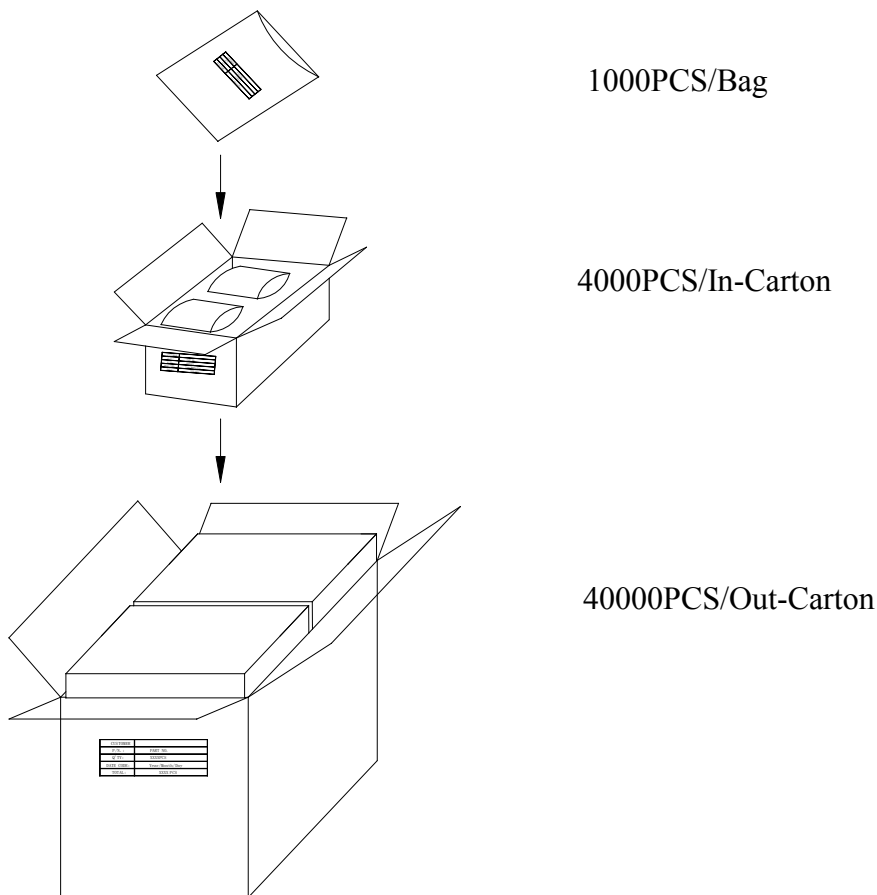
I_v : The test value of the chip that has completed the reliability test

U: Upper Specification Limit

L: Lower Specification Limit

Official Product	HV-94I2004	Customer Part No.		Data Sheet No.
	*****	*****		CDAE-010-682
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov.04 2019	Version of 1.0	Page 9/11

Packing Specification:



Official Product	HV-94I2004	Customer Part No.		Data Sheet No.
	*****	*****		CDAE-010-682
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov.04 2019	Version of 1.0	Page 10/11

Revision History

Revision	Page	Version No.	Revision Date
Initial Release		1.0	11-04-2019

Official Product	HV-94I2004	Customer Part No.		Data Sheet No.
	*****	*****		CDAE-010-682
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov.04 2019	Version of 1.0	Page 11/11