

Harvatek 3.0mm ROUND LED LAMP**HV-47B2004M**

Official Product	HV-47B2004M	Customer Part No.		Data Sheet No.
	*****	*****		CDAE-010-191
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov. 11 2019	Version of 1.1	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.

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Compliance and Certification

ISO9002, QS9000 and ISO14001 Certified
RoHS Compliant



Orderable Information

H V - 47 B 200 4 M

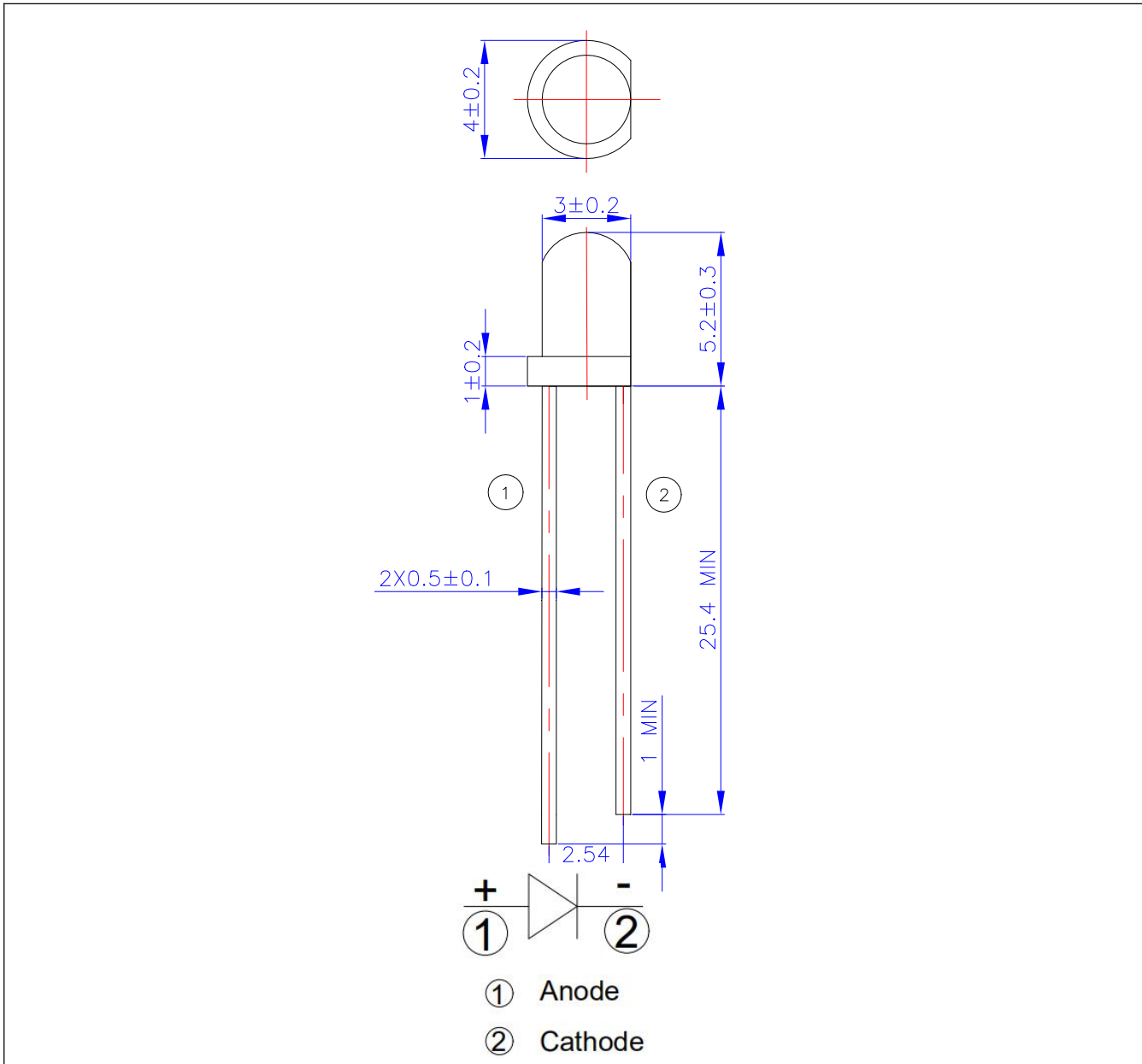
Series Name	Color Code	Remark
HV : HARVATEK	47B200: 3.0mm ROUND LED LAMP,5.2mm Lens. InGaN 468nm Blue Chip 4:HARVATEK Part No. M: White Diffused.	

Features:

- Stable Color
- Popular 3.0mm through hole package, 5.2mm lens height.
- White Diffused lens.

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Package Dimensions:



Notes:

1. All dimensions are millimeters.
2. Tolerance is ± 0.25 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	Topr	-40to+85	°C
Storage Temperature	Tstg	-40to+100	°C
Soldering Temperature*1	Tsol	260±5	°C
Power Dissipation	P _d	114	mW
Reverse Voltage	V _R	5	V
Peak Forward Current*2	I _{FP}	0.1	A

*1:Soldering time ≦ 5 seconds. *2:Pulse Width ≦ 100 μ s and Duty ≦ 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	3.8	V
Reverse Current	I_R	$V_R=5\text{ V}$	/	/	10	μA
Luminous Intensity	I_V	$I_F=20\text{ mA}$	100	300	/	mcd
Viewing Angle	$2\theta_{1/2}$	$I_F=20\text{ mA}$	/	50	/	deg
Dominant Wavelength	λ_d	$I_F=20\text{ mA}$	463	468	/	nm
Peak Wavelength	λ_p	$I_F=20\text{ mA}$	460	465	/	nm
Spectrum Radiation Bandwidth	$\Delta\lambda$	$I_F=20\text{ mA}$	/	25	/	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)		
Grade	Min.	Min.
R	100	200
S	160	320
T	250	500
U	400	800
V	630	1250
W	1000	2000
X	1600	3200
Y	2500	4500

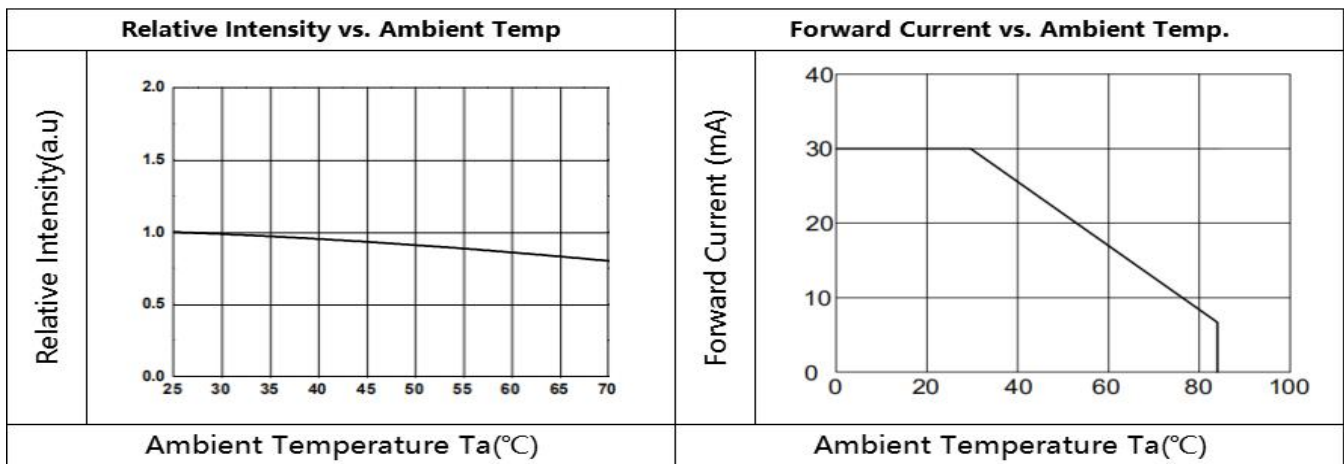
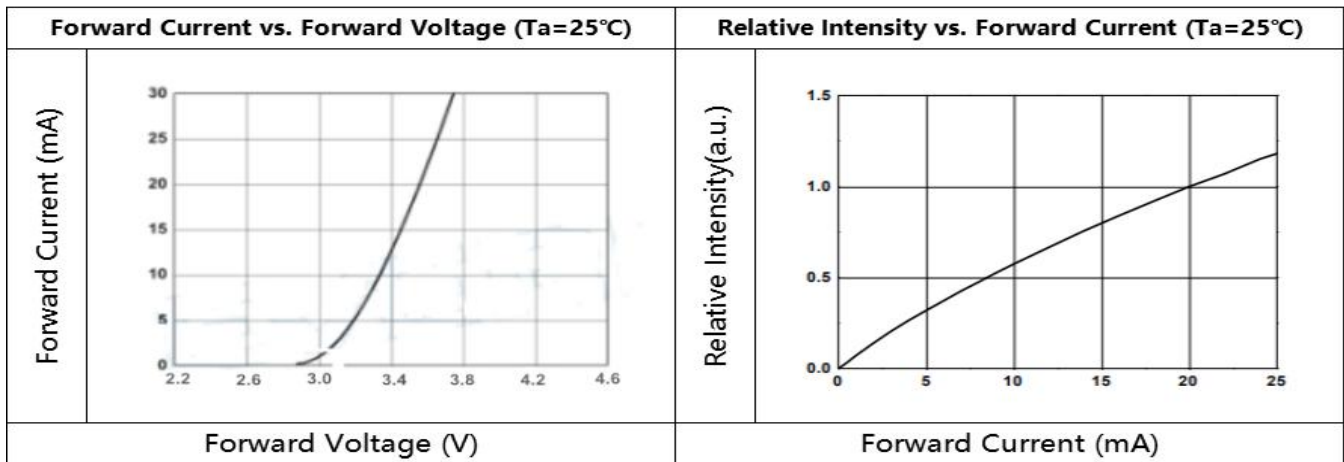
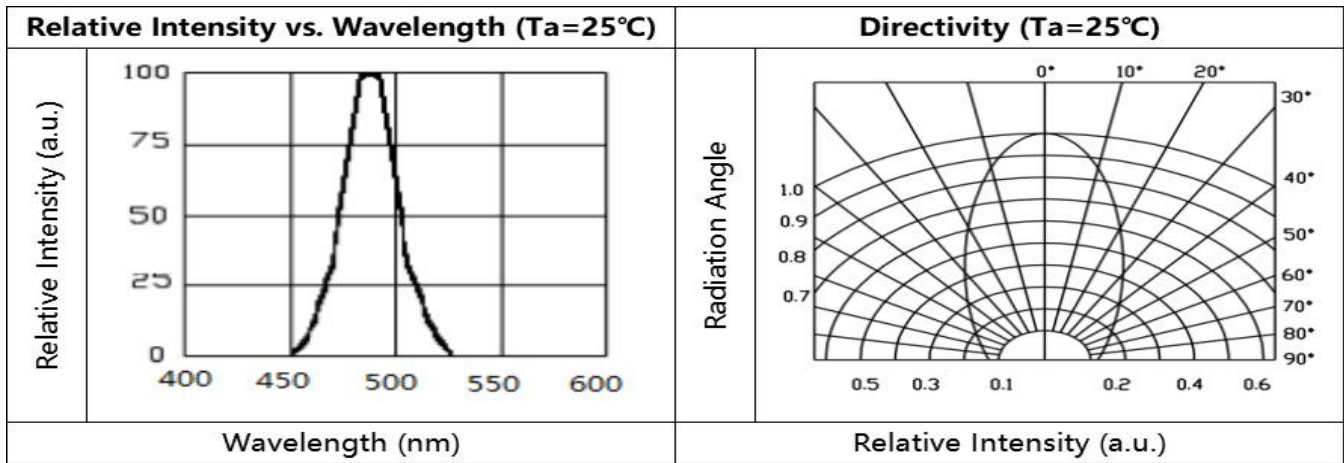
λd (nm)		
Grade	Min.	Max.
2	463	466.5
3	465.5	468.5
4	467.5	470.5
5	469.5	472.5
6	471.5	474.5
7	473.5	476.5
8	475.5	478.5
9	477.5	480

Notes:

- 1.Luminous intensity: +/-15%.
- 2.Wavelength: +/-1nm

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

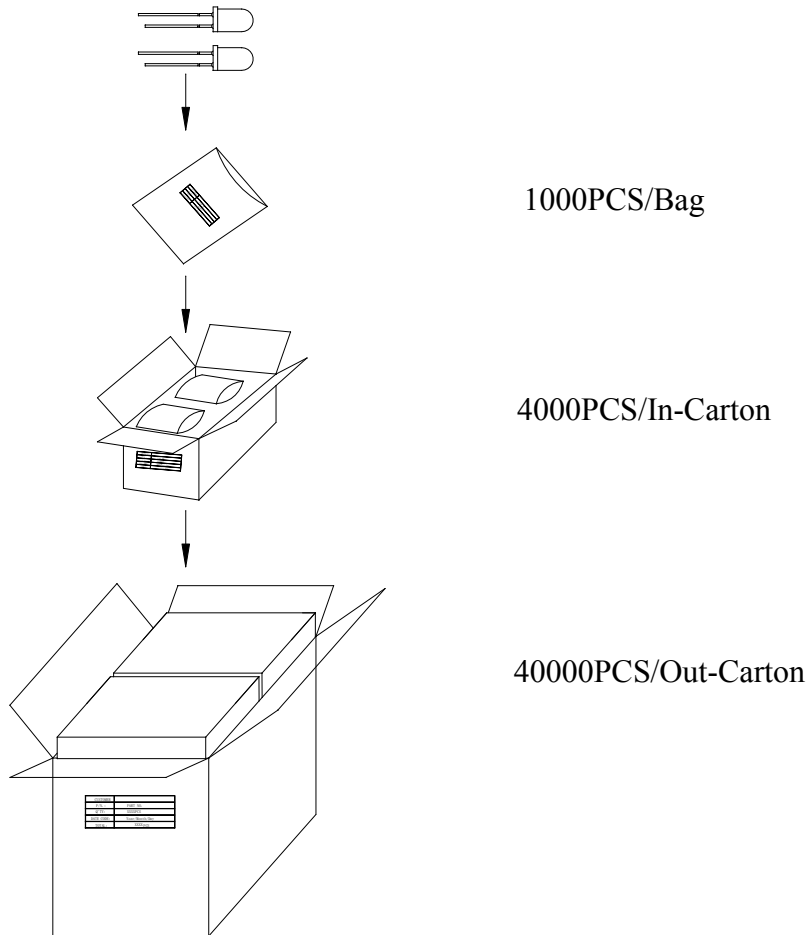
I_v : The test value of the chip that has completed the reliability test

U: Upper Specification Limit

L: Lower Specification Limit

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Packing Specification:



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Revision History

Revision	Page	Version No.	Revision Date
Initial Release		1.0	09-18-2018
Modifies Dominant Wavelength	6	1.1	11-11-2019

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