

**Harvatek 3.0mm Round Type Arrayed LEDs**  
**HV-315746/260/UTC**

Official Product	HV-315746/260/UTC	Customer Part No.		Data Sheet No.
	*****	*****		CDAE-020-293
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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 - 31 5746 / 260 / U T C**

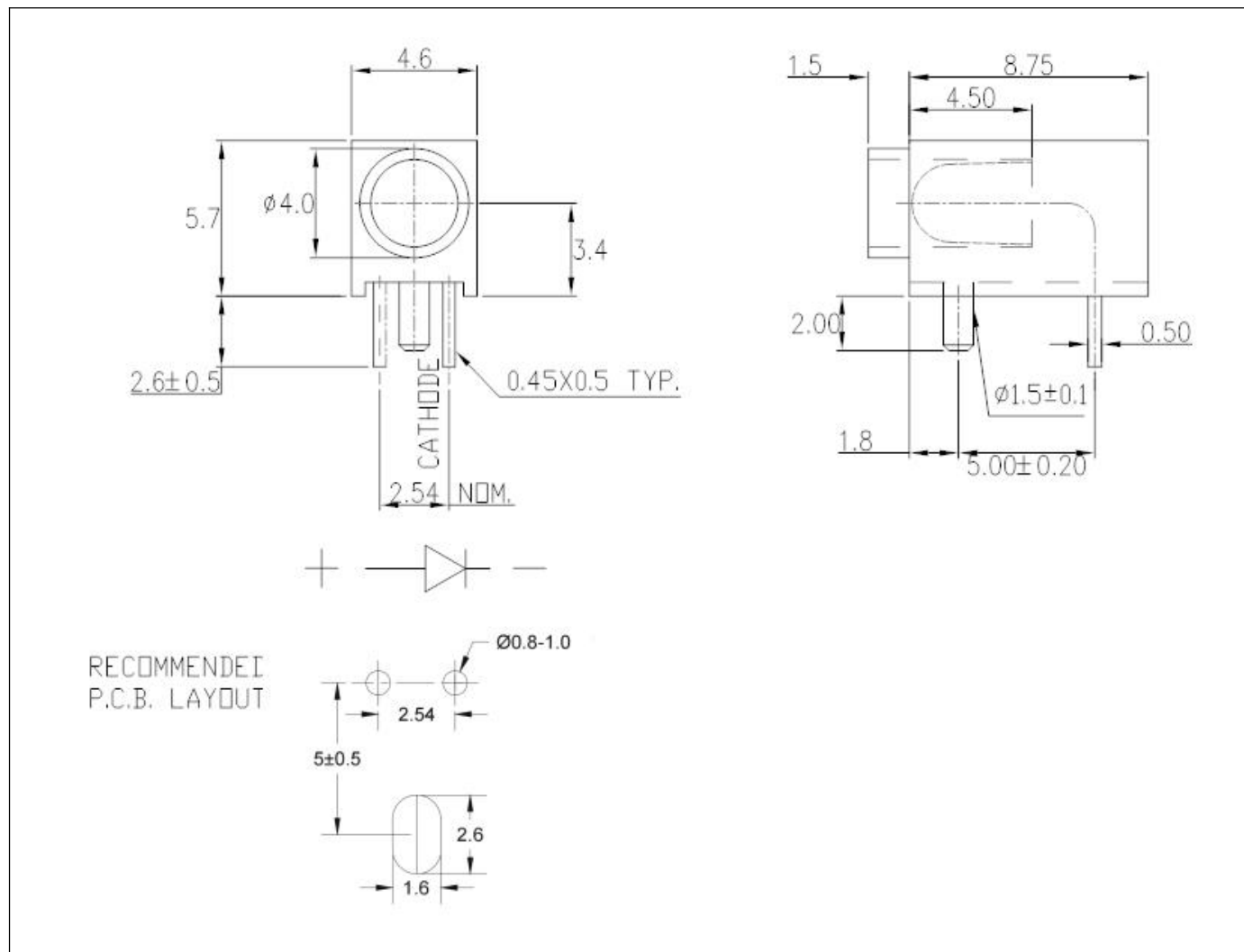
Series Name	Color Code	Remark
HV : HARVATEK	31: 1 Lamp 5746: HARVATEK Part No. 260: 3.0mm Round LED LAMP,4.5mm Lens. UT : InGaN 470nm Chip.Emitted color is white C : Water clear.	

## Features:

- Stable Color.
- Popular 3.0mm through hole package.
- 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.
- 3.Specifications are subject to change without notice.

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**Absolute Maximum Ratings at Ta=25°C**

Parameter	Symbol	Rating	Unit
Forward Current	I <sub>F</sub>	30	mA
Operating Temperature	Topr	-25to+85	°C
Storage Temperature	Tstg	-30to+100	°C
Soldering Temperature*1	Tsol	260±5	°C
Power Dissipation	P <sub>d</sub>	108	mW
Reverse Voltage	V <sub>R</sub>	5	V
Peak Forward Current*2	I <sub>FP</sub>	0.1	A

\*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	$V_F$	$I_F=20\text{ mA}$	/	3.3	3.8	V
Reverse Current	$I_R$	$V_R=5\text{ V}$	/	/	100	$\mu\text{A}$
Luminous Intensity	$I_V$	$I_F=20\text{ mA}$	400	1100	1900	mcd
Chromaticity Coordinates	X	$I_F=20\text{ mA}$	/	0.3	/	/
	Y	$I_F=20\text{ mA}$	/	0.3	/	/
Viewing Angle	$2\theta_{1/2}$	$I_F=20\text{ mA}$	/	45	/	deg

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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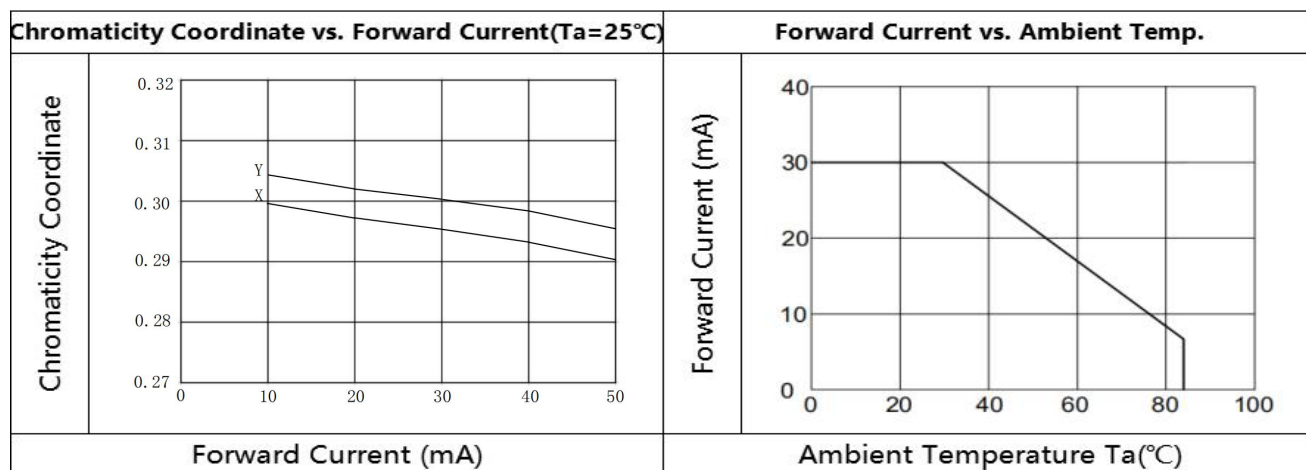
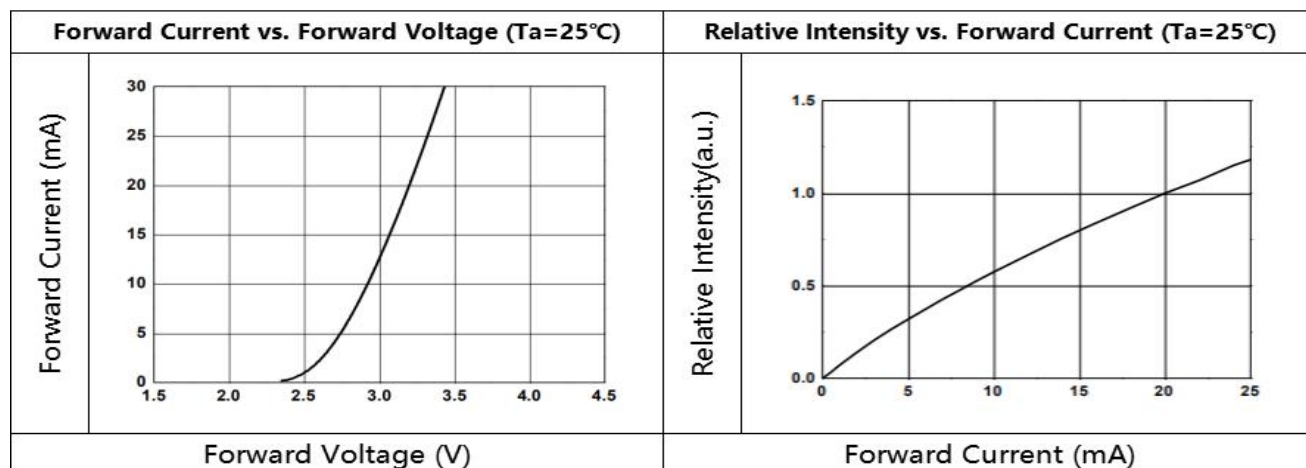
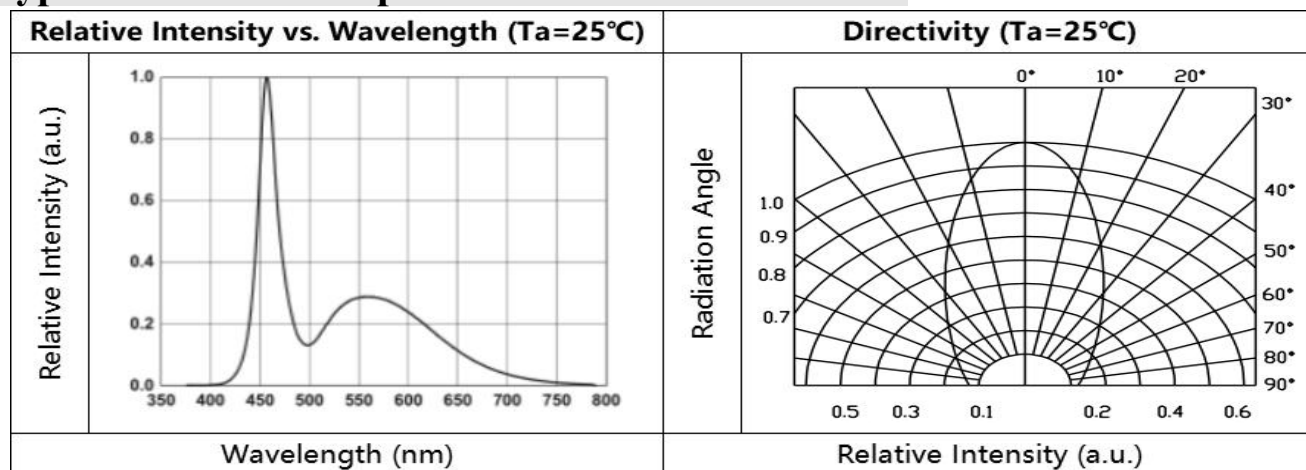
## Specifications for Bin Grading:

Iv (mcd)		
Grade	Min	Max
U	400	800
V	630	1250
W	1000	1900

Notes:Luminous intensity:+/-15%.

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## Typical Electrical / Optical Characteristics Curves



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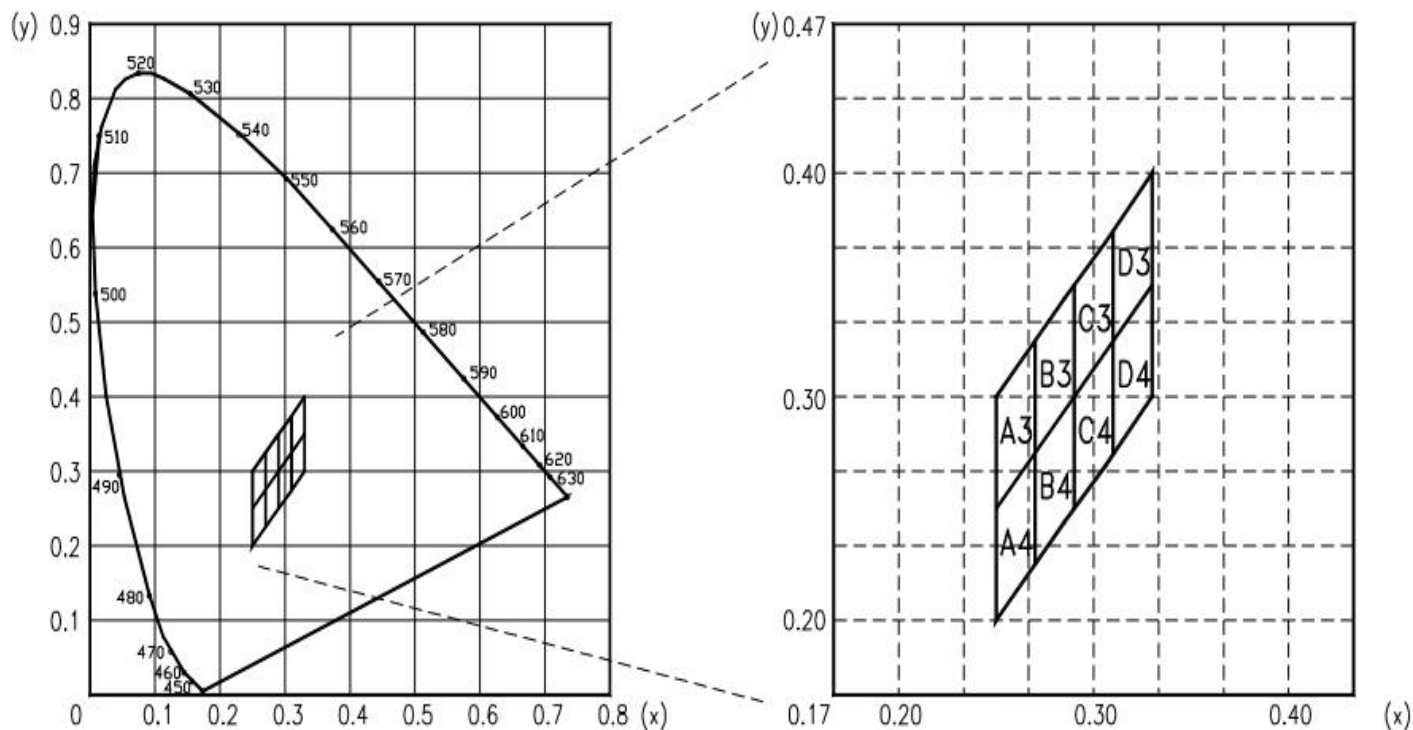


**C.I.E. Chromaticity Diagram**

Hue Ranks	Chromaticity Coordinates, CC(x,y), If=20mA				
A3	X	0.270	0.270	0.250	0.250
	Y	0.275	0.325	0.300	0.250
A4	X	0.270	0.250	0.250	0.270
	Y	0.275	0.250	0.200	0.225
B3	X	0.290	0.290	0.270	0.270
	Y	0.300	0.350	0.325	0.275
B4	X	0.290	0.270	0.270	0.290
	Y	0.300	0.275	0.225	0.250
C3	X	0.310	0.310	0.290	0.290
	Y	0.325	0.375	0.350	0.300
C4	X	0.310	0.290	0.290	0.310
	Y	0.325	0.300	0.250	0.275
D3	X	0.330	0.330	0.310	0.310
	Y	0.350	0.400	0.375	0.325
D4	X	0.330	0.310	0.310	0.330
	Y	0.350	0.325	0.275	0.300

Note: Tolerance of each bin limit is  $\pm 0.01$

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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	$I_v \leq I_{vt} * 0.5$ 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: Ivt: To test  $I_v$  value of the chip before the reliability test.

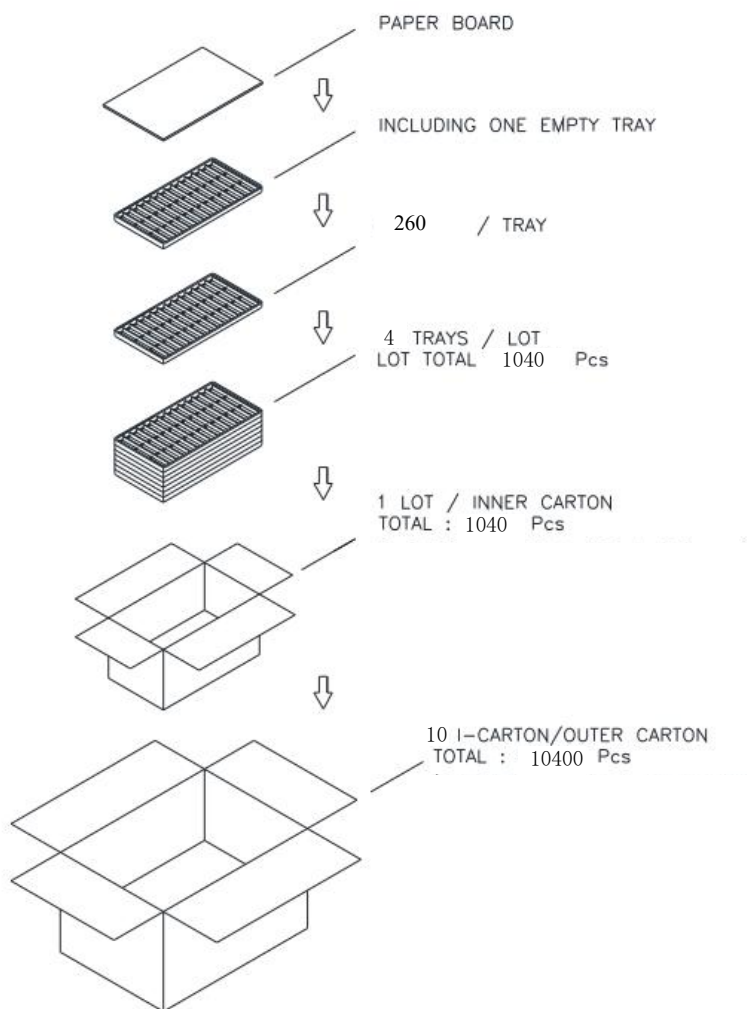
$I_v$ : The test value of the chip that has completed the reliability test

U: Upper Specification Limit

L: Lower Specification Limit

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## Packing Specification:



	<b>HARVATEK</b>	
CPN:		<b>RoHS</b>
P/N:		
	HV-315746/260/UTC	
QTY:		CAT:
		HUE:
LOT NO:		REF:

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## Revision History

Revision	Page	Version No.	Revision Date
Initial Release		1.0	10-11-2018
Holder size setting	4	1.1	12-26-2018
Holder size setting	4	1.2	06-10-2019
Modify Packing Specification	11		
Modify Packing Specification	11	1.3	06-25-2019
Modify Packing Specification	11	1.4	07-04-2019
Modifies Absolute Maximum Ratings	5	1.5	11-11-2019
Modify the graphic	4	1.6	05-14-2024

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