

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

Official Product	HV-315746/260/UTC-BS	Customer Part No.		Data Sheet No.
	*****	*****		HV-315746/260/UTC-BS
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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-315746/260/UTC-BS	Customer Part No.		Data Sheet No.
	*****	*****		HV-315746/260/UTC-BS
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov.09 2022	Version of 1.2	Page 2/13

## Compliance and Certification

ISO9002, QS9000 and ISO14001 Certified

RoHS Compliant



## Orderable Information

**H V - 31 5746 / 260 / UTC - BS**

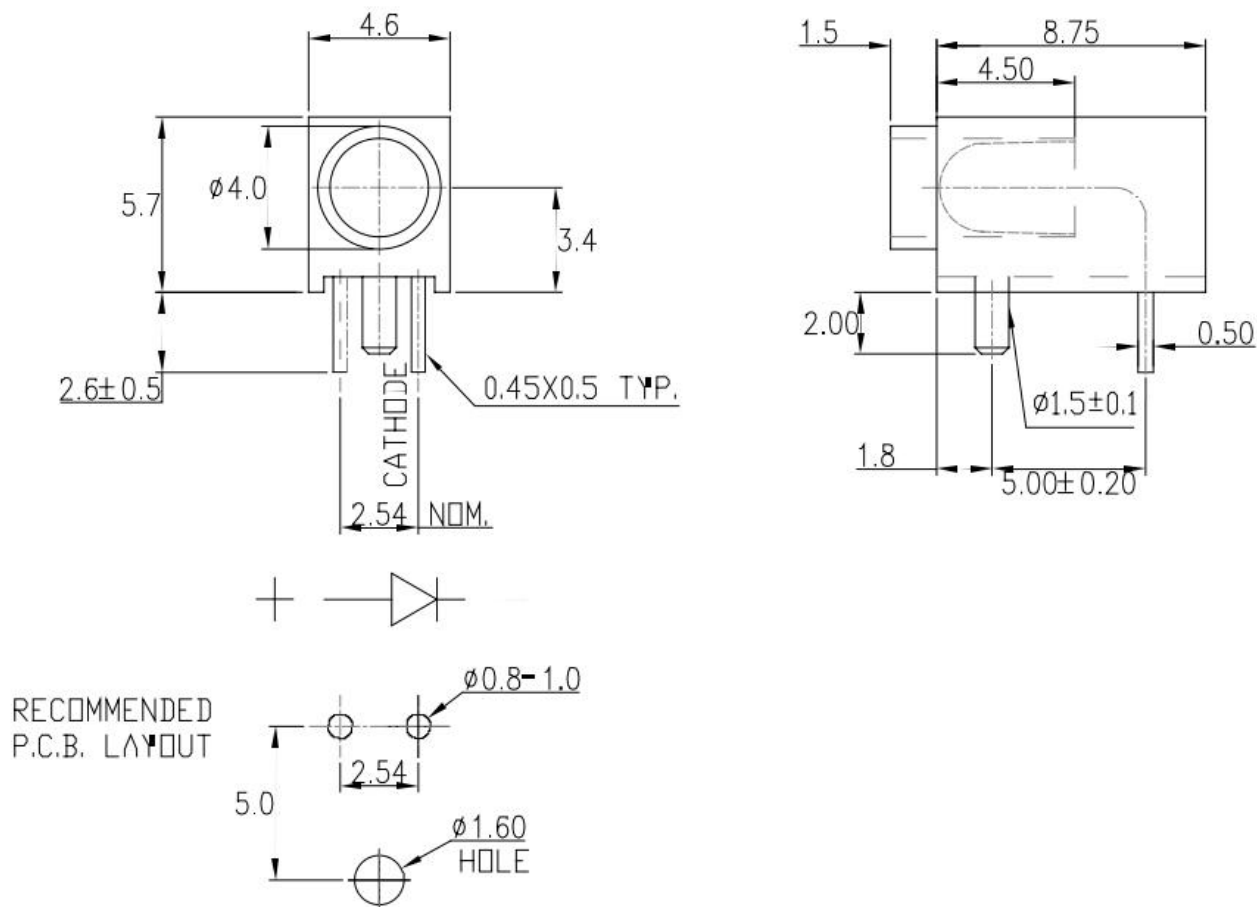
Series Name	Color Code	Remark
HV : HARVATEK	31: 1 Lamp 5746: HARVATEK Part No. 260: 3.0mm Round LED LAMP,4.5mm Lens. UT : InGaN 470nm Chip.Emitted color is white. C : Water clear. BS:HARVATEK Part No.	

## Features:

- Stable Color.
- Popular 3.0mm through hole package.
- Water clear Lens.

Official Product	HV-315746/260/UTC-BS	Customer Part No.	Data Sheet No.
	*****	*****	HV-315746/260/UTC-BS
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov.09 2022	Version of 1.2
			Page 3/13

## 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.
- 4.Use the glue with a TG point of height and.
- 5.oint the silver glue at the second solder point.

Official Product	HV-315746/260/UTC-BS	Customer Part No.	Data Sheet No.
	*****	*****	HV-315746/260/UTC-BS
Specifications are subject to change without notice. Data and drawings herein are copyrighted.	Nov.09 2022	Version of 1.2	Page 4/13

## Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Rating	Unit
Forward Current	I <sub>F</sub>	30	mA
Operating Temperature	T <sub>opr</sub>	-25to+85	°C
Storage Temperature	T <sub>stg</sub>	-30to+100	°C
Soldering Temperature*1	T <sub>sol</sub>	270±3	°C
Power Dissipation	P <sub>d</sub>	100	mW
Reverse Voltage	V <sub>R</sub>	5	V
Peak Forward Current*2	I <sub>FP</sub>	0.1	A

\*1:Soldering time ≦ 5 seconds.

\*2:Pulse Width ≦ 100μs and Duty ≦ 1%.

Official Product	HV-315746/260/UTC-BS	Customer Part No.		Data Sheet No.
	*****	*****		HV-315746/260/UTC-BS
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov.09 2022	Version of 1.2	Page 5/13

## 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	$I_R$	$V_R=5\text{ V}$	/	/	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.

Official Product	HV-315746/260/UTC-BS	Customer Part No.		Data Sheet No.
	*****	*****		HV-315746/260/UTC-BS
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov.09 2022	Version of 1.2	Page 6/13

**Specifications for Bin Grading:**

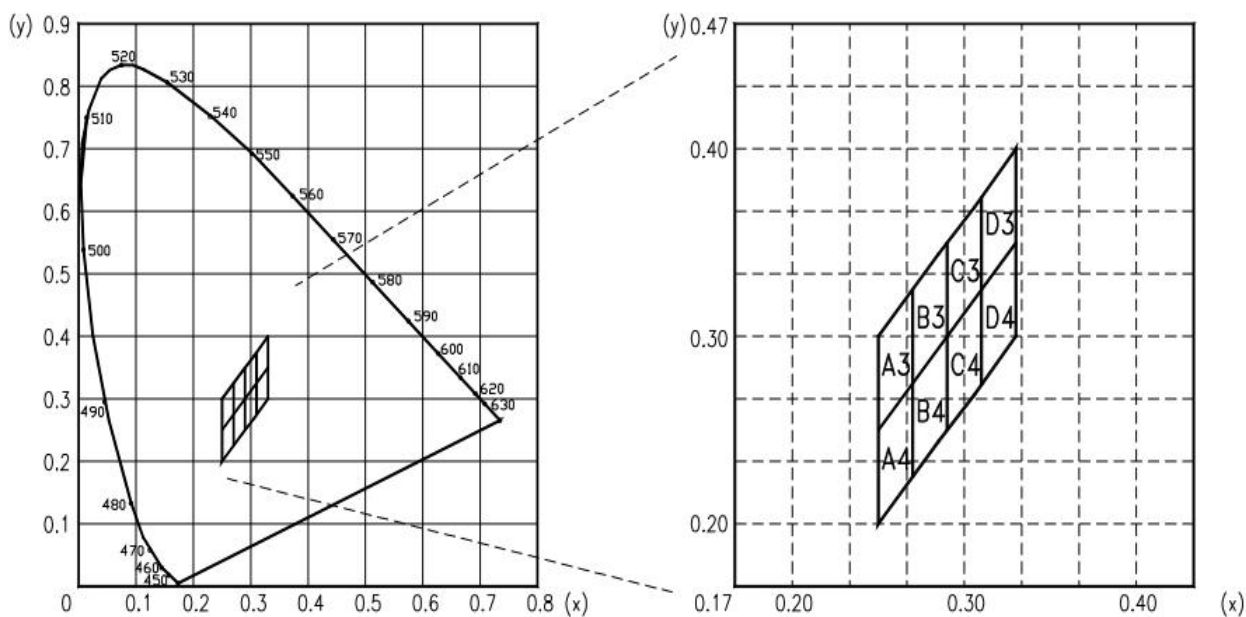
Iv (mcd)		
Grade	Min	Max
U	400	800
V	630	1250
W	1000	1900

Notes:Luminous intensity: +/-15%.

Official Product	HV-315746/260/UTC-BS	Customer Part No.		Data Sheet No.
	*****	*****		HV-315746/260/UTC-BS
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov.09 2022	Version of 1.2	Page 7/13

## C.I.E. Chromaticity Diagram

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

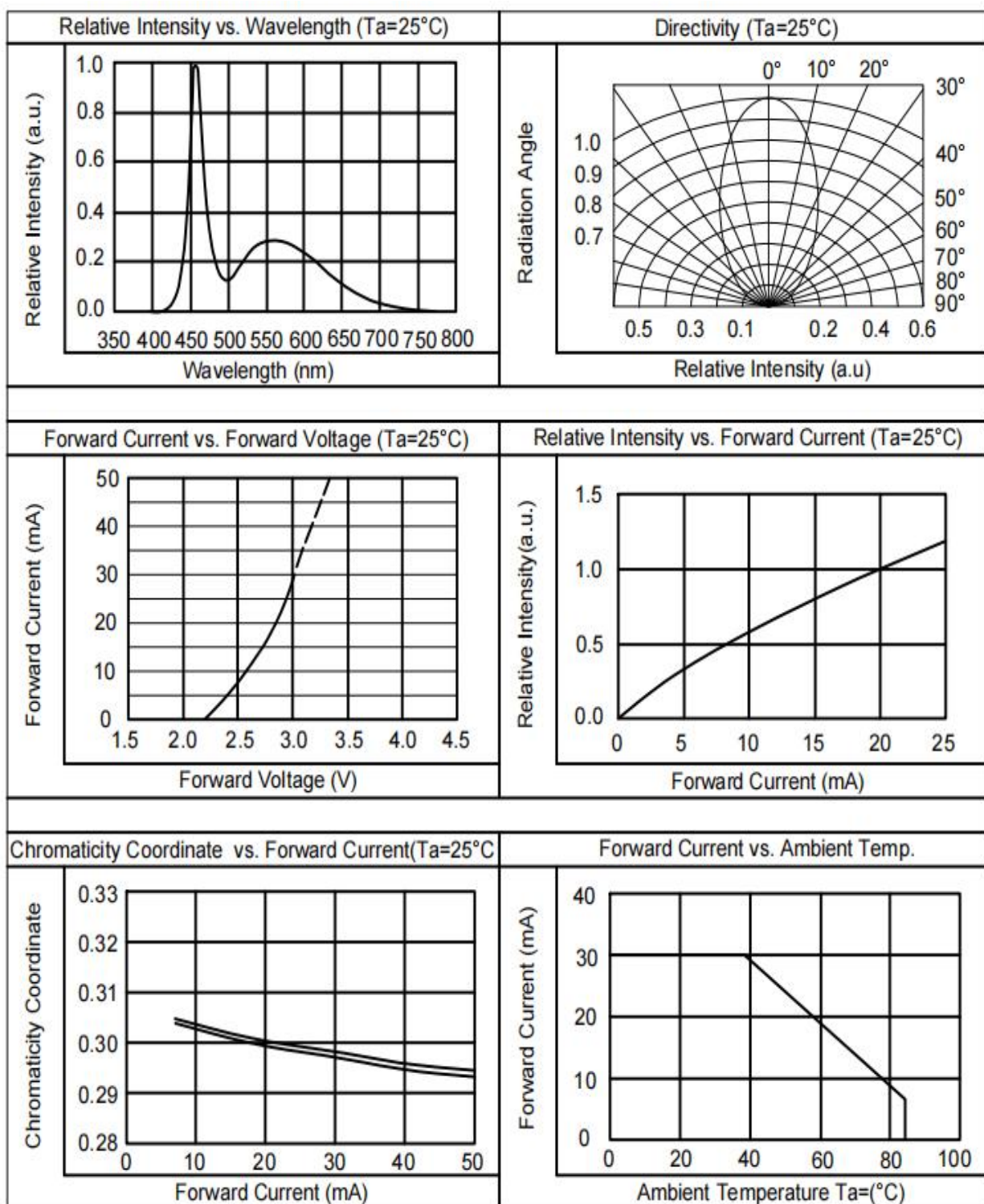


Note: Tolerance of each bin limit is  $\pm 0.01$

Official Product	HV-315746/260/UTC-BS	Customer Part No.		Data Sheet No.
	*****	*****		HV-315746/260/UTC-BS
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov.09 2022	Version of 1.2	Page 8/13



## Typical Electrical / Optical Characteristics Curves



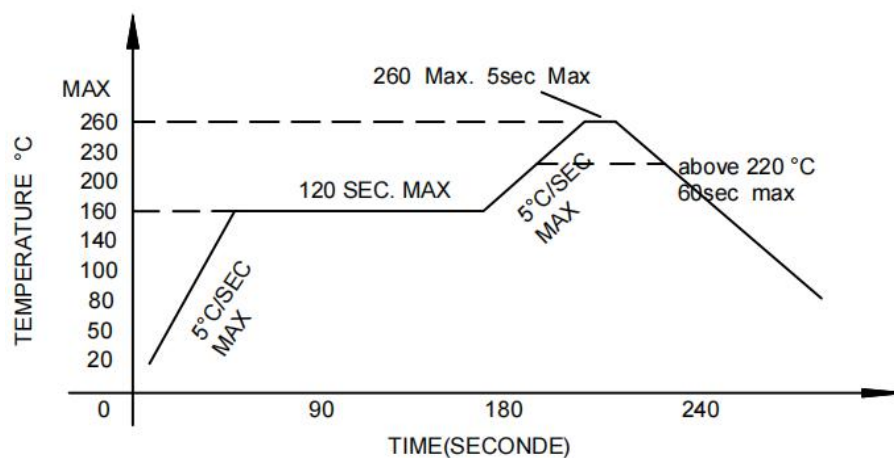
Official Product	HV-315746/260/UTC-BS	Customer Part No.	Data Sheet No.
	*****	*****	HV-315746/260/UTC-BS
Specifications are subject to change without notice. Data and drawings herein are copyrighted.	Nov.09 2022	Version of 1.2	Page 9/13

## Soldering condition

- Careful attention should be paid during soldering. When soldering, leave more than 2mm from solder joint to Led, and soldering beyond the base of the tie bar is recommended.
- Avoiding applying any stress to the lead frame while the LED are at high temperature particularly when soldering.
- Dip and hand soldering should not be done more than one time.
- After soldering the LED, the epoxy bulb should be protected from mechanical shock or vibration until the LED return to room temperature.
- A rapid-rate process is not recommended for cooling the LED down from the peak temperature.
- Although the recommended soldering conditions are specified in the above table, dip or hand soldering at the lowest possible temperature is desirable for the LED.
- Wave soldering parameter must be set and maintain according to recommended temperature and dwell time in the solder wave.

### • Recommended soldering conditions

Hand Soldering		Wave Soldering	
Temp. at tip of iron	300°C Max. (30W Max.)	Preheat temp.	160°C Max. (120 sec Max.)
Soldering time	3 sec Max.	Bath temp. & time	260 Max., 5 sec Max
Distance	2mm Min.(From solder joint to Led)	Distance	2mm Min. (From solder joint to Led)



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Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov.09 2022	Version of 1.2
			Page 10/13

## 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.

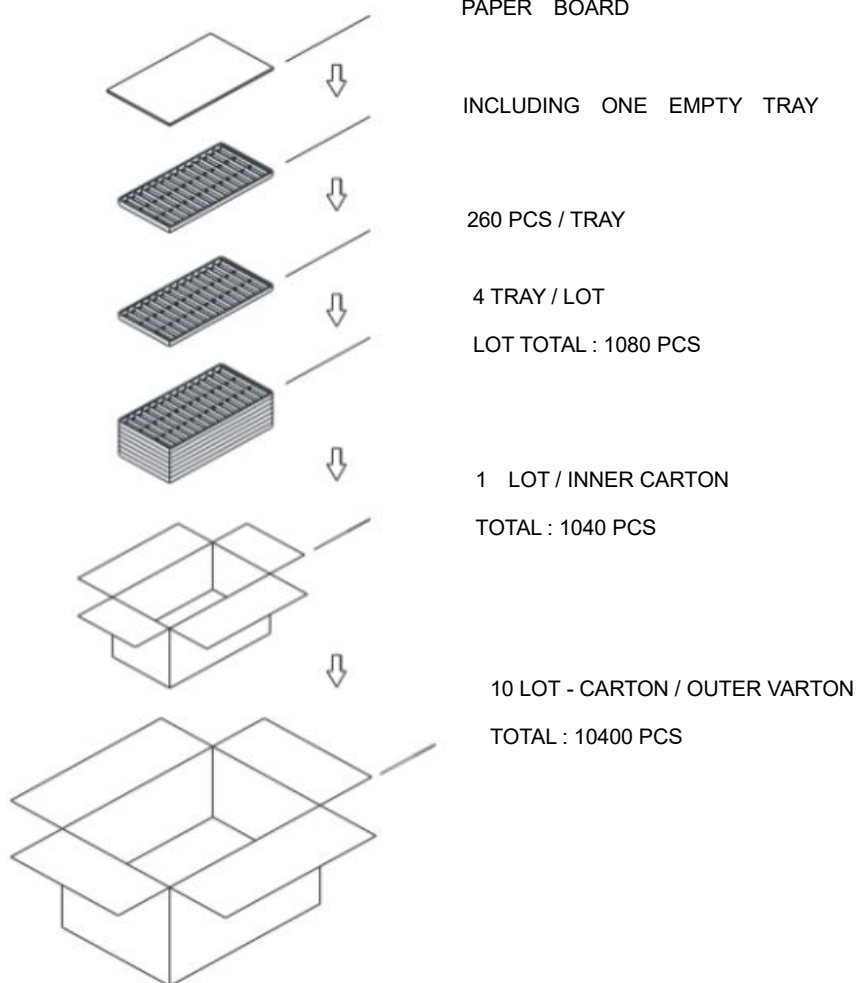
$I_v$ : The test value of the chip that has completed the reliability test.

U: Upper Specification Limit.

L: Lower Specification Limit.

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	*****	*****		HV-315746/260/UTC-BS
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov.09 2022	Version of 1.2	Page 11/13

## Packing Specification:



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

Official Product	HV-315746/260/UTC-BS	Customer Part No.	Data Sheet No.
	*****		HV-315746/260/UTC-BS
Specifications are subject to change without notice. Data and drawings herein are copyrighted.	Nov.09 2022	Version of 1.2	Page 12/13

## Revision History

Revision	Page	Version No.	Revision Date
Initial Release		1.0	06-28-2022
Modify welding parameters	5	1.1	09-16-2022
Add comments		1.2	11-09-2022

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	*****	*****	HV-315746/260/UTC-BS
Specifications are subject to change without notice. Data and drawings herein are copyrighted.	Nov.09 2022	Version of 1.2	Page 13/13