

**Harvatek 3.0mm Round LED LAMP with Holder****HV-I7US50H-MP9A-U1930**

---

|  |                                |                            |   |
|--|--------------------------------|----------------------------|---|
| Official Product   | HV-I7US50H-MP9A-U1930<br>***** | Customer Part No.<br>***** | Data Sheet No.<br>HV-I7US50H-MP9A-U1930 |
| Specifications are subject to change without notice. Data and drawings herein are copyrighted. | Dec.15 2025                    | Version of 1.1             | Page 1/12                               |

## **DISCLAIMER**

HARVATEK reserves the right to make changes without further notice to any products herein to improve reliability, function or design. HARVATEK does not assume any liability arising out of the application or use of any product or circuit described herein; neither does it convey any license under its patent rights, nor the rights of others.

## **LIFE SUPPORT POLICY**

HARVATEK's products are not authorized for use as critical components in life support devices or systems without the express written approval of the President of HARVATEK or HARVATEK INTERNATIONAL. As used herein:

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.

---

|  |                                |                            |   |
|--|--------------------------------|----------------------------|---|
| Official Product   | HV-I7US50H-MP9A-U1930<br>***** | Customer Part No.<br>***** | Data Sheet No.<br>HV-I7US50H-MP9A-U1930 |
| Specifications are subject to change without notice. Data and drawings herein are copyrighted. | Dec.15 2025                    | Version of 1.1             | Page 2/12                               |

## Compliance and Certification

ISO9002, QS9000 and ISO14001 Certified

RoHS Compliant



## Orderable Information

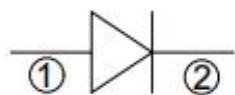
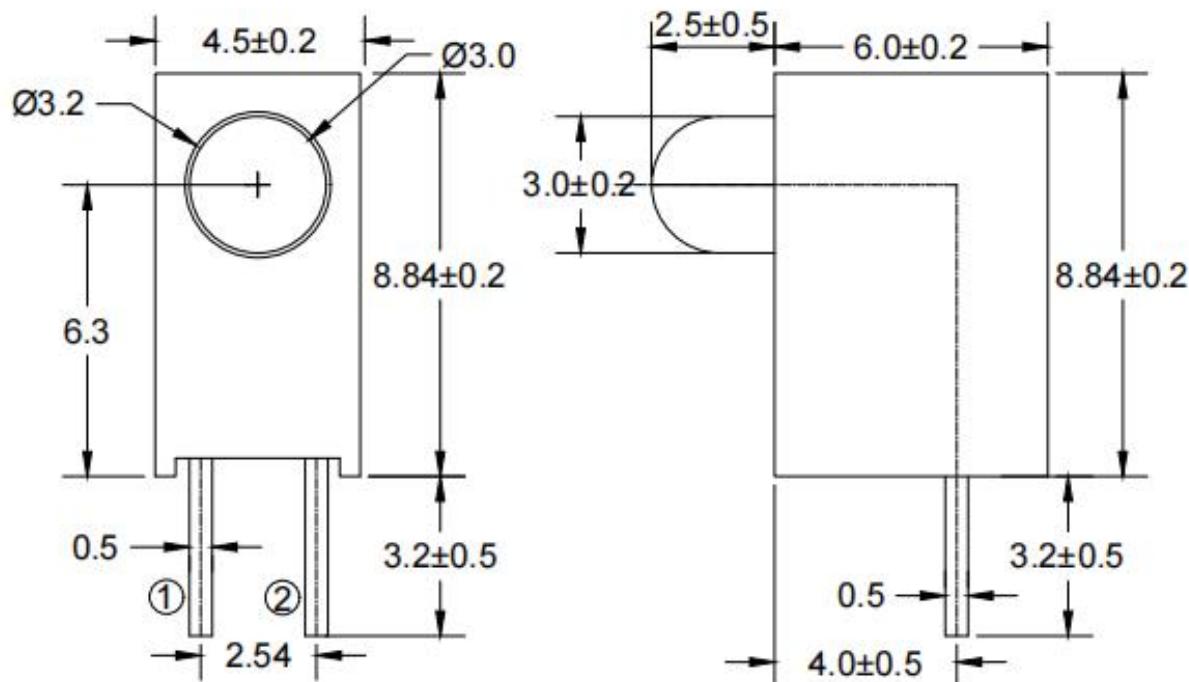
**H V - I7 US50 H - M P9 A - U1930**

| Series Name      | Color Code  | Remark                             |
|------------------|---|------------------------------------|
| HV :<br>HARVATEK | I7US :<br>3.0mm Round LED Lamp With Holder.<br>With AlGaNp 625nm Red Chip.<br>50 : Viewing angle 50 deg.<br>H : HARVATEK Part No.<br>MP9 : Square HOLDER.<br>A : 1 LAMP | U1930:<br>Customer Product<br>Code |

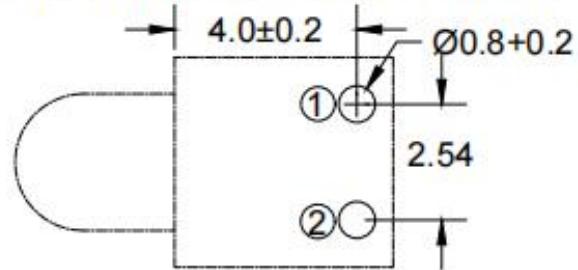
## Features:

- Stable Color.
- Popular 3.0mm through hole package.
- Red Diffused lens.

|  |                                |                            |   |
|--|--------------------------------|----------------------------|---|
| Official Product   | HV-I7US50H-MP9A-U1930<br>***** | Customer Part No.<br>***** | Data Sheet No.<br>HV-I7US50H-MP9A-U1930 |
| Specifications are subject to change without notice. Data and drawings herein are copyrighted. | Dec.15 2025                    | Version of 1.1             | Page 3/12                               |

**Package Dimensions:**

① Anode  
② Cathode

**RECOMMENDED PCB LAYOUT****Notes:**

1. All dimensions are millimeters.
2. Tolerance is  $\pm 0.25$ mm unless otherwise noted.
3. Specifications are subject to change without notice.

| Official Product   | HV-I7US50H-MP9A-U1930 | Customer Part No. | Data Sheet No.        |
|--|-----------------------|-------------------|-----------------------|
|  | *****                 | *****             | HV-I7US50H-MP9A-U1930 |
| Specifications are subject to change without notice. Data and drawings herein are copyrighted. | Dec.15 2025           | Version of 1.1    | Page 4/12             |

**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> | -40to+85 | °C   |
| Storage Temperature     | T <sub>stg</sub> | -40to+85 | °C   |
| Soldering Temperature*1 | T <sub>sol</sub> | 260      | °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>  | 75       | mA   |

\*1:Soldering time  $\leq$  5 seconds.

\*2:Pulse Width  $\leq$  100μs and Duty  $\leq$  1%

| Official Product   | HV-I7US50H-MP9A-U1930 | Customer Part No. | Data Sheet No.        |
|--|-----------------------|-------------------|-----------------------|
|  | *****                 | *****             | HV-I7US50H-MP9A-U1930 |
| Specifications are subject to change without notice. Data and drawings herein are copyrighted. | Dec.15 2025           | Version of 1.1    | Page 5/12             |

**Electrical and Optical Characteristic**

| Parameter                    | Symbol          | Condition   | Min. | Typ. | Max. | Unit    |
|------------------------------|-----------------|-------------|------|------|------|---------|
| Forward Voltage              | $V_F$           | $I_F=20$ mA | /    | 2.0  | 2.5  | V       |
| Reverse Current              | $I_R$           | $V_R= 5$ V  | /    | /    | 10   | $\mu$ A |
| Luminous Intensity           | $I_V$           | $I_F=20$ mA | 60   | 180  | /    | mcd     |
| Viewing Angle                | $2\theta_{1/2}$ | $I_F=20$ mA | /    | 50   | /    | deg     |
| Dominant Wavelength          | $\lambda_d$     | $I_F=20$ mA | /    | 625  | /    | nm      |
| Peak Wavelength              | $\lambda_p$     | $I_F=20$ mA | /    | 630  | /    | nm      |
| Spectrum Radiation Bandwidth | $\Delta\lambda$ | $I_F=20$ mA | /    | 25   | /    | 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-I7US50H-MP9A-U1930 | Customer Part No. | Data Sheet No.        |
|--|-----------------------|-------------------|-----------------------|
|  | *****                 | *****             | HV-I7US50H-MP9A-U1930 |
| Specifications are subject to change without notice. Data and drawings herein are copyrighted. | Dec.15 2025           | Version of 1.1    | Page 6/12             |

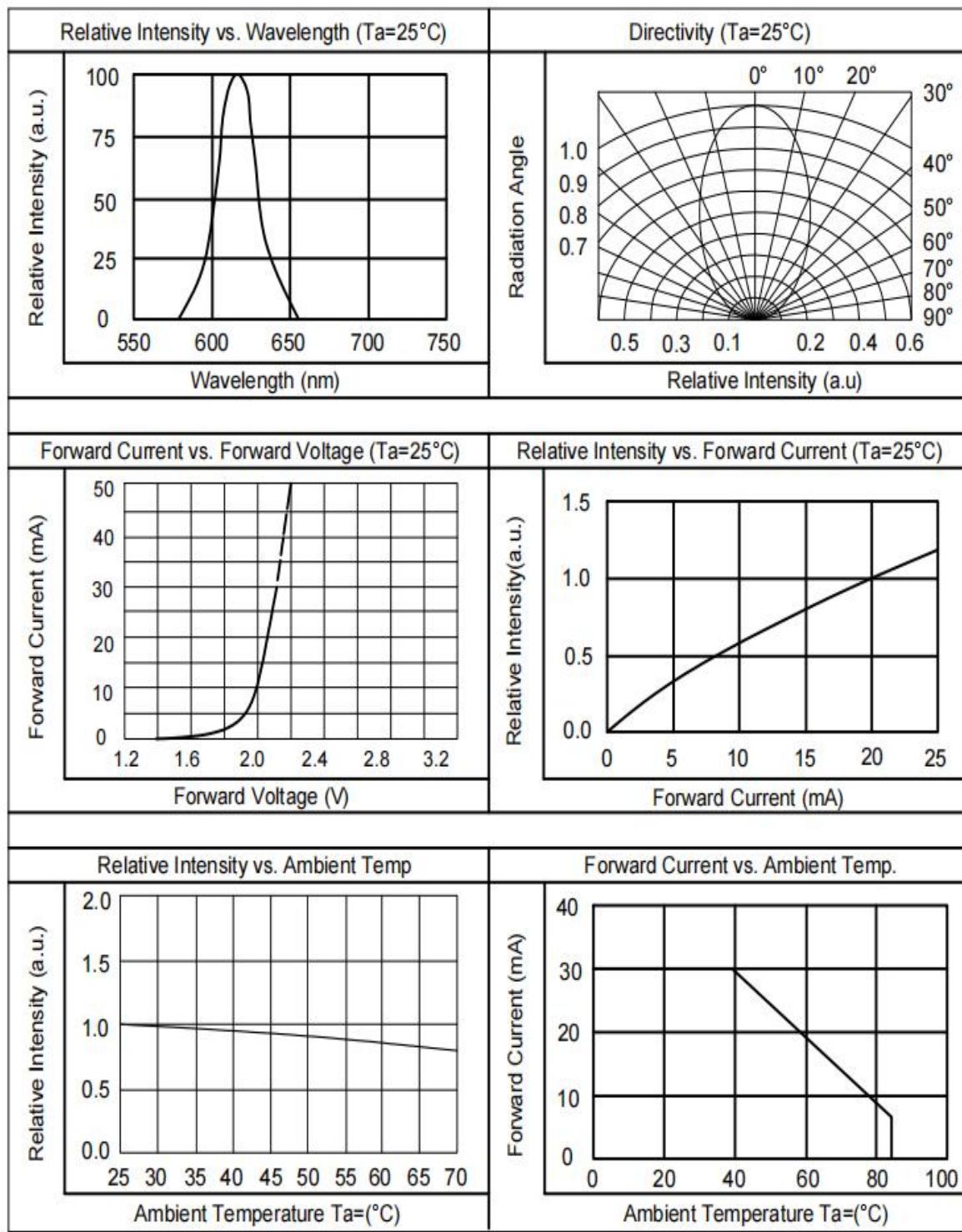
**Specifications for Bin Grading:**

| Iv (mcd) |      |      |
|----------|------|------|
| Grade    | Min. | Max. |
| Q        | 60   | 125  |
| R        | 100  | 200  |
| S        | 160  | 320  |
| T        | 250  | 500  |

Notes: Luminous intensity: +/-15%.

|  |                                |                            |   |
|--|--------------------------------|----------------------------|---|
| Official Product   | HV-I7US50H-MP9A-U1930<br>***** | Customer Part No.<br>***** | Data Sheet No.<br>HV-I7US50H-MP9A-U1930 |
| Specifications are subject to change without notice. Data and drawings herein are copyrighted. | Dec.15 2025                    | Version of 1.1             | Page 7/12                               |

## Typical Electro-Optical Characteristics Curves



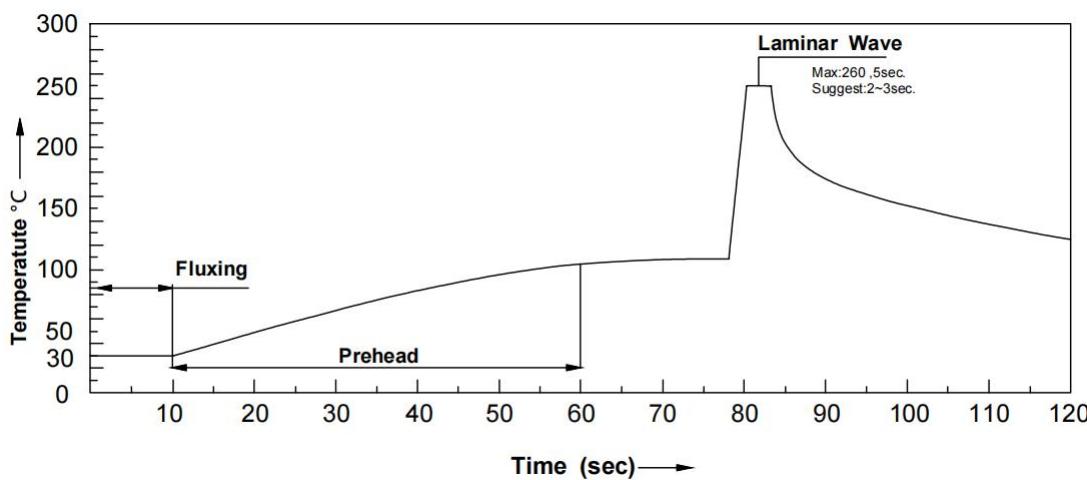
| Official Product   | HV-I7US50H-MP9A-U1930<br>***** | Customer Part No.<br>***** | Data Sheet No.<br>HV-I7US50H-MP9A-U1930 |
|--|--------------------------------|----------------------------|---|
| Specifications are subject to change without notice. Data and drawings herein are copyrighted. | Dec.15 2025                    | Version of 1.1             | Page 8/12                               |

## Soldering condition

1. 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.
2. Avoiding applying any stress to the lead frame while the LED are at high temperature particularly when soldering.
3. Dip and hand soldering should not be done more than one time.
4. After soldering the LED, the epoxy bulb should be protected from mechanical shock or vibration until the LED return to room temperature.
5. A rapid-rate process is not recommended for cooling the LED down from the peak temperature.
6. 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.
7. 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.     | 100°C Max. (60 sec Max.)            |
| Soldering time       | 3 sec Max.                         | Bath temp. & time | 260°C Max., 5 sec Max               |
| Distance             | 2mm Min.(From solder joint to Led) | Distance          | 2mm Min. (From solder joint to Led) |



| Official Product   | HV-I7US50H-MP9A-U1930 | Customer Part No. | Data Sheet No.        |
|--|-----------------------|-------------------|-----------------------|
|  | *****                 | *****             | HV-I7US50H-MP9A-U1930 |
| Specifications are subject to change without notice. Data and drawings herein are copyrighted. | Dec.15 2025           | Version of 1.1    | Page 9/12             |

**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      | $Iv \leq Ivt * 0.5$<br>or<br>$Vf \geq U$<br>or<br>$Vf \leq L$ | 0/1   |
| 2  | Temperature Cycle                | H:+100°C 15min<br>J 5min<br>L:-40°C 15min | 300 CYCLES       | 76 PCS      |   | 0/1   |
| 3  | Thermal Shock                    | H:+100°C 5min<br>J 10sec<br>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<br>IF=20mA                      | 1000 HRS         | 76 PCS      |   | 0/1   |
| 7  | High Temperature / High Humidity | 85°C/85%RH                                | 1000 HRS         | 76 PCS      |   | 0/1   |

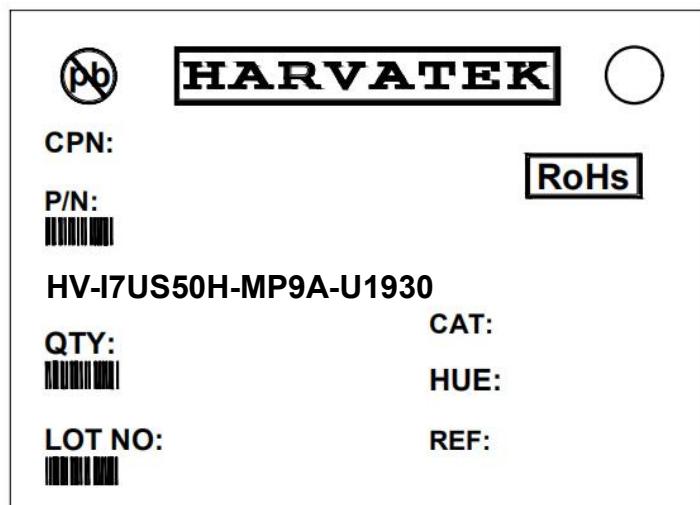
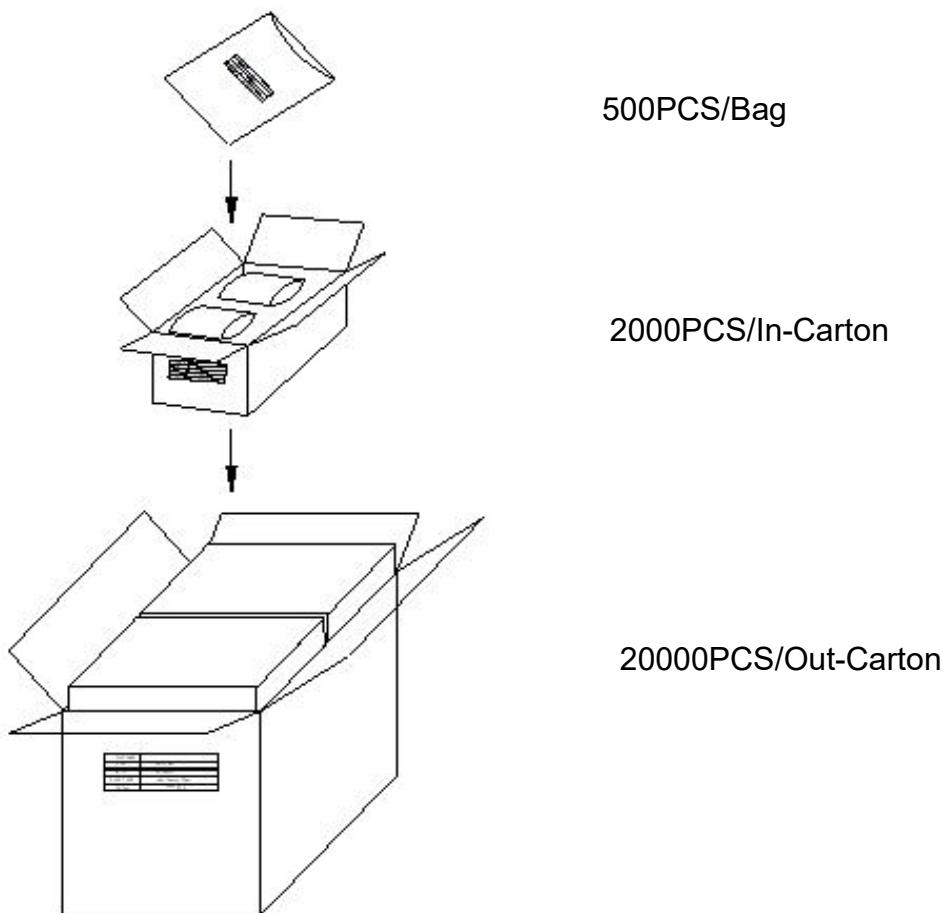
Note: Ivt: To test Iv value of the chip before the reliability test.

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

U: Upper Specification Limit.

L: Lower Specification Limit.

| Official Product   | HV-I7US50H-MP9A-U1930 | Customer Part No. | Data Sheet No.        |
|--|-----------------------|-------------------|-----------------------|
|  | *****                 | *****             | HV-I7US50H-MP9A-U1930 |
| Specifications are subject to change without notice. Data and drawings herein are copyrighted. | Dec.15 2025           | Version of 1.1    | Page 10/12            |

**Packing Specification:**

| Official Product   | HV-I7US50H-MP9A-U1930 | Customer Part No. | Data Sheet No.        |
|--|-----------------------|-------------------|-----------------------|
|  | *****                 | *****             | HV-I7US50H-MP9A-U1930 |
| Specifications are subject to change without notice. Data and drawings herein are copyrighted. | Dec.15 2025           | Version of 1.1    | Page 11/12            |

## Revision History

| Revision                              | Page | Version No. | Revision Date |
|---------------------------------------|------|-------------|---------------|
| Initial Release                       |      | 1.0         | 08-14-2021    |
| Modify drawing and furnace conditions | 4/9  | 1.1         | 12-15-2025    |
|                                       |      |             |               |
|                                       |      |             |               |
|                                       |      |             |               |
|                                       |      |             |               |

|  |                                |                            |   |
|--|--------------------------------|----------------------------|---|
| Official Product   | HV-I7US50H-MP9A-U1930<br>***** | Customer Part No.<br>***** | Data Sheet No.<br>HV-I7US50H-MP9A-U1930 |
| Specifications are subject to change without notice. Data and drawings herein are copyrighted. | Dec.15 2025                    | Version of 1.1             | Page 12/12                              |