

# 2024 NEW



## TUSMA SERIES LED DISPLAY MODULE

TUSMA is an LED module that can be applied to mainstream control systems and the self-developed control system of Leyard. TUSMA modules use Harvatek LED lamps and PWM drivers. Leyard's professional LED components engineers control the production of raw materials, and strict manage the craft, processes, and production. TUSMA series is flexible, lightweight, easy to install and maintain, and is widely used in building facades, shopping malls, wedding decorations, and festive events.



- ◇ High-performance flame-retardant suite, reliable and safe.
- ◇ Common HUB board.
- ◇ 160° wide viewing angle.
- ◇ Pixel by pixel calibration technology for better display.
- ◇  $\geq 100\%$  NTSC color gamut makes the display more realistic.
- ◇ No-clean solder paste printing, full penetration of welding feet.

### PRODUCT IMAGES



# TECHNICAL PARAMETERS

## TUSMA SERIES INDOOR

| Item                              | TUS-P1.5-MA             | TUS-P1.8-MA          | TUS-P2.0-MA          | TUS-P2.5-MA          | TUS-P3-MA            | TUS-P4-MA            |
|-----------------------------------|-------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Pixel Configuration               | SMD                     | SMD                  | SMD                  | SMD                  | SMD                  | SMD                  |
| Pitch(mm)                         | 1.538                   | 1.86                 | 2.0                  | 2.5                  | 3                    | 4                    |
| Module Resolution(pixel)(WxH)     | 208x104                 | 172x64               | 160x80               | 128x64               | 64x64                | 80x40                |
| Module Size(mm)(WxHxD)            | 320x160x17              | 320x160x17           | 320x160x17           | 320x160x17           | 192x192x16.5         | 320x160x16.5         |
| Module Weight(Kg)                 | 0.46                    | 0.46                 | 0.45                 | 0.45                 | 0.275                | 0.23                 |
| Unit Area(m2)                     | 0.0512                  | 0.0512               | 0.0512               | 0.0512               | 0.03686              | 0.03277              |
| Pixel Density(dots/m2)            | 422500                  | 288906               | 250000               | 160000               | 111111               | 62500                |
| Brightness(nits)                  | ≥600                    | ≥600                 | ≥600                 | ≥600                 | ≥600                 | ≥600                 |
| Color Temperature(K)              | 3000 - 15000 Adjustable |                      |                      |                      |                      |                      |
| Horizontal Viewing Angle(°)       | 160                     | 160                  | 160                  | 160                  | 160                  | 160                  |
| Vertical Viewing Angle(°)         | 140                     | 140                  | 140                  | 140                  | 140                  | 140                  |
| Deviation of LED Luminance Center | <3%                     | <3%                  | <3%                  | <3%                  | <3%                  | <3%                  |
| Brightness Uniformity             | ≥97%                    | ≥97%                 | ≥97%                 | ≥97%                 | ≥97%                 | ≥97%                 |
| Contrast Ratio                    | 5000:1                  | 5000:1               | 5000:1               | 5000:1               | 5000:1               | 5000:1               |
| Max Power Consumption(W/m2)       | ≤438                    | ≤504                 | ≤427                 | ≤385                 | ≤456                 | ≤385                 |
| Power Consumption (W/m2)          | ≤146                    | ≤168                 | ≤142                 | ≤128                 | ≤152                 | ≤128                 |
| Power Supply                      | AC100-240V(50-60Hz)     |                      |                      |                      |                      |                      |
| Drive Mode                        | Constant Current 52S    | Constant Current 43S | Constant Current 32S | Constant Current 16S | Constant Current 32S | Constant Current 16S |
| Frame Rate(Hz)                    | 50&60                   | 50&60                | 50&60                | 50&60                | 50&60                | 50&60                |
| Refresh Rate(Hz)                  | ≥3840                   | ≥3840                | ≥3840                | ≥3840                | ≥3840                | ≥3840                |
| Lifetime(hrs)                     | 100,000                 | 100,000              | 100,000              | 100,000              | 100,000              | 100,000              |
| Operation Temperature(°C)         | -10 ~ 40                | -10 ~ 40             | -10 ~ 40             | -10 ~ 40             | -10 ~ 40             | -10 ~ 40             |
| Storage Temperature(°C)           | -20 ~ 60                | -20 ~ 60             | -20 ~ 60             | -20 ~ 60             | -20 ~ 60             | -20 ~ 60             |
| Operation Humidity(RH)            | 10-80% no condensation  |                      |                      |                      |                      |                      |
| Storage Humidity(RH)              | 10-85% no condensation  |                      |                      |                      |                      |                      |
| Chip Brand Support                | Harvatek (Taiwan) - MA  |                      |                      |                      |                      |                      |

## TUSMA SERIES OUTDOOR

| Item                              | TUS-P4-O-MA            | TUS-P5-O-MA         | TUS-P6-O-MA         | TUS-P8-O-MA         | TUS-P10-O-MA        |
|-----------------------------------|------------------------|---------------------|---------------------|---------------------|---------------------|
| Pixel Configuration               | SMD                    | SMD                 | SMD                 | SMD                 | SMD                 |
| Pitch(mm)                         | 4                      | 5                   | 6                   | 8                   | 10                  |
| Module Resolution(pixel)(WxH)     | 80x40                  | 64x32               | 32x32               | 32x16               | 32x16               |
| Module Size(mm)(WxHxD)            | 320x160x16.5           | 320x160x17.4        | 192x192x18          | 256x128x18          | 320x160x25          |
| Module Weight(Kg)                 | 0.32                   | 0.48                | 0.34                | 0.30                | 0.46                |
| Unit Area(m2)                     | 0.03277                | 0.0512              | 0.03686             | 0.03277             | 0.03277             |
| Pixel Density(dots/m2)            | 62500                  | 40000               | 27778               | 15625               | 10000               |
| Brightness(nits)                  | ≥ 5000                 | ≥ 5000              | ≥ 5000              | ≥ 5000              | ≥ 5000              |
| Color Temperature(K)              | 3000-15000 Adjustable  |                     |                     |                     |                     |
| Horizontal Viewing Angle(°)       | 160                    | 160                 | 160                 | 160                 | 160                 |
| Vertical Viewing Angle(°)         | 140                    | 140                 | 140                 | 140                 | 140                 |
| Deviation of LED Luminance Center | <3%                    | <3%                 | <3%                 | <3%                 | <3%                 |
| Brightness Uniformity             | ≥97%                   | ≥97%                | ≥97%                | ≥97%                | ≥97%                |
| Contrast Ratio                    | 5000:1                 | 5000:1              | 5000:1              | 5000:1              | 5000:1              |
| Max Power Consumption(W/m2)       | ≤667                   | ≤656                | ≤798                | ≤833                | ≤967                |
| Power Consumption (W/m2)          | ≤222                   | ≤219                | ≤266                | ≤278                | ≤383                |
| Power Supply                      | AC100-240V(50-60Hz)    |                     |                     |                     |                     |
| Drive Mode                        | Constant Current 8S    | Constant Current 8S | Constant Current 8S | Constant Current 8S | Constant Current 8S |
| Frame Rate(Hz)                    | 50&60                  | 50&60               | 50&60               | 50&60               | 50&60               |
| Refresh Rate(Hz)                  | ≥3840                  | ≥3840               | ≥3840               | ≥3840               | ≥3840               |
| Lifetime(hrs)                     | 100,000                | 100,000             | 100,000             | 100,000             | 100,000             |
| Operation Temperature(°C)         | -20 ~ 40               | -20 ~ 40            | -20 ~ 40            | -20 ~ 40            | -20 ~ +60           |
| Storage Temperature(°C)           | -20 ~ 60               | -20 ~ 60            | -20 ~ 60            | -20 ~ 60            | -30 ~ +70           |
| Operation Humidity(RH)            | 10-80% no condensation |                     |                     |                     |                     |
| Storage Humidity(RH)              | 10-85% no condensation |                     |                     |                     |                     |
| Chip Brand Support                | Harvatek (Taiwan) - MA |                     |                     |                     |                     |

- Control by phone and computer.
  - Allow to display text, store information and images.
- Remake: Above data is subject to change without previous notice

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