

## 产 品 规 格 书

## PRODUCT SPECIFICATION



|                       |                                                                               |
|-----------------------|-------------------------------------------------------------------------------|
| 产品系列:<br>Series       | P - 工程款系列<br>P - Project Series                                               |
| 产品名称:<br>Description  | P1.86 户内全彩模组<br>P1.86 Indoor Full Color Module                                |
| 产品型号:<br>Model        | PH1.86-I                                                                      |
| 文件编号:<br>Spec NO.     | HJ-03-RD-G-003                                                                |
| 版本编号:<br>Version      | A2                                                                            |
| 发行日期:<br>Date         | 2025.10.14                                                                    |
| 生产厂商:<br>Manufacturer | 山西高科华杰光电科技股份有限公司<br>Shanxi Hi-Tech Huajie Optoelectronic Technology Co., Ltd. |

## 文件修订履历表 Document revision resume

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## 产品介绍 Description

本产品主要用于户内 LED 显示，外形尺寸 320\*160 (mm)，像素间距 1.86mm，采用 SMD1515 灯珠、阻燃 V-0 级 PCB、PC 套件、HUB75 接口。

This product is primarily used for indoor LED display, with external dimensions of 320\*160 (mm), pixel pitch of 1.86mm, featuring SMD1515 LED lamp beads, flame-retardant V-0 grade PCB, PC housing, and HUB75 interface.

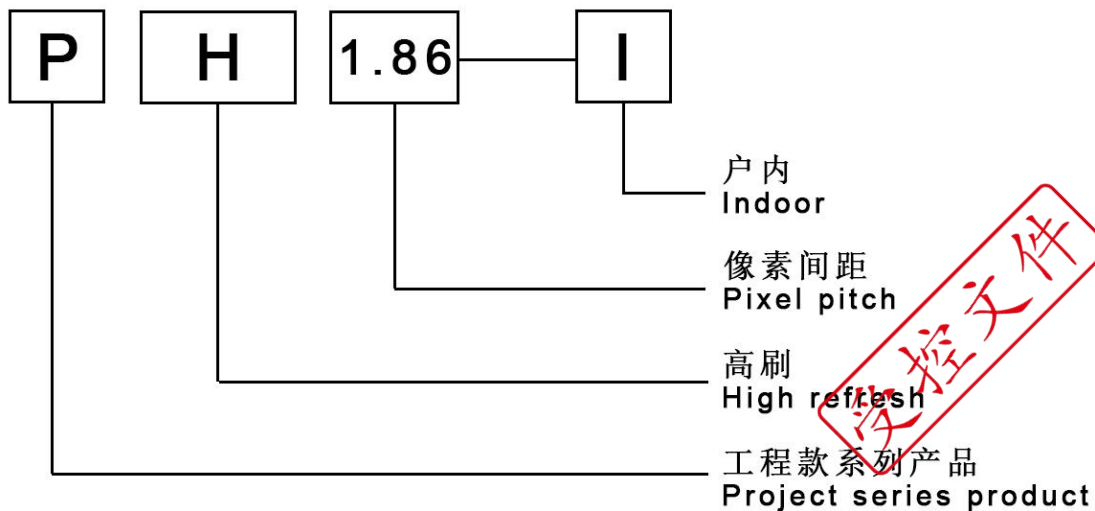
产品质量稳定可靠，具备高亮度、高对比度、超宽视角等性能优势，显示效果优秀，适用于广告传媒、舞台演播、安防调度、教育会议、展览展示等各类室内场景。

The product offers stable and reliable quality, featuring high luminance, high contrast, an ultra-wide viewing angle, and other performance advantages. Its excellent display effects make it suitable for various indoor scenarios, including advertising media, stage performances, security dispatching, educational conferences, and exhibition displays.

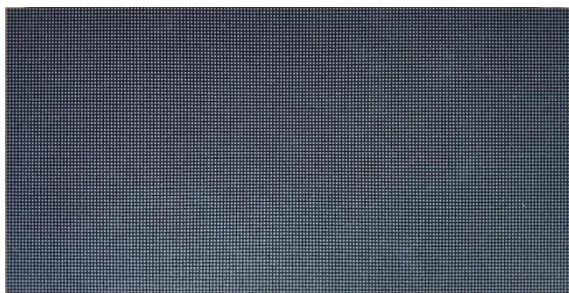
注：请不要在高温、高湿、高盐碱环境下使用本产品。

Note: Please do not use this product in high temperature, high humidity, high salinity or alkali environment.

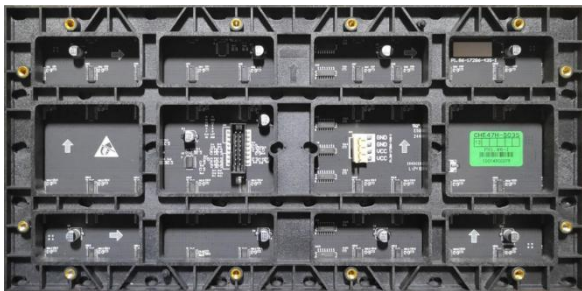
## 产品型号 Model



## 产品外观 Appearance



正面(Front)



单行管方案 (Unidirectional tube)



双行管方案 (Bidirectional tube)

背面(Back)

## 接口定义 Interface definition

|     |    |    |     |
|-----|----|----|-----|
| R1  | 1  | 2  | G1  |
| B1  | 3  | 4  | GND |
| R2  | 5  | 6  | G2  |
| B2  | 7  | 8  | E   |
| A   | 9  | 10 | B   |
| C   | 11 | 12 | D   |
| CLK | 13 | 14 | LAT |
| OE  | 15 | 16 | GND |

| 引脚 I/O       | 信号 Signal | 功能 Function                                       |
|--------------|-----------|---------------------------------------------------|
| 1、2、3        | R1、G1、B1  | 第一组红色、绿色、蓝色数据<br>Red, Green, Blue data of group 1 |
| 4、16         | GND       | 信号地<br>Signal Ground                              |
| 5、6、7        | R2、G2、B2  | 第二组红色、绿色、蓝色数据<br>Red, Green, Blue data of group 2 |
| 8、9、10、11、12 | E、A、B、C、D | 行控制<br>Line Control                               |
| 13           | CLK       | 时钟信号<br>Clock Signal                              |
| 14           | LAT       | 锁存信号<br>Latch Signal                              |
| 15           | OE        | 使能信号<br>Enable Signal                             |

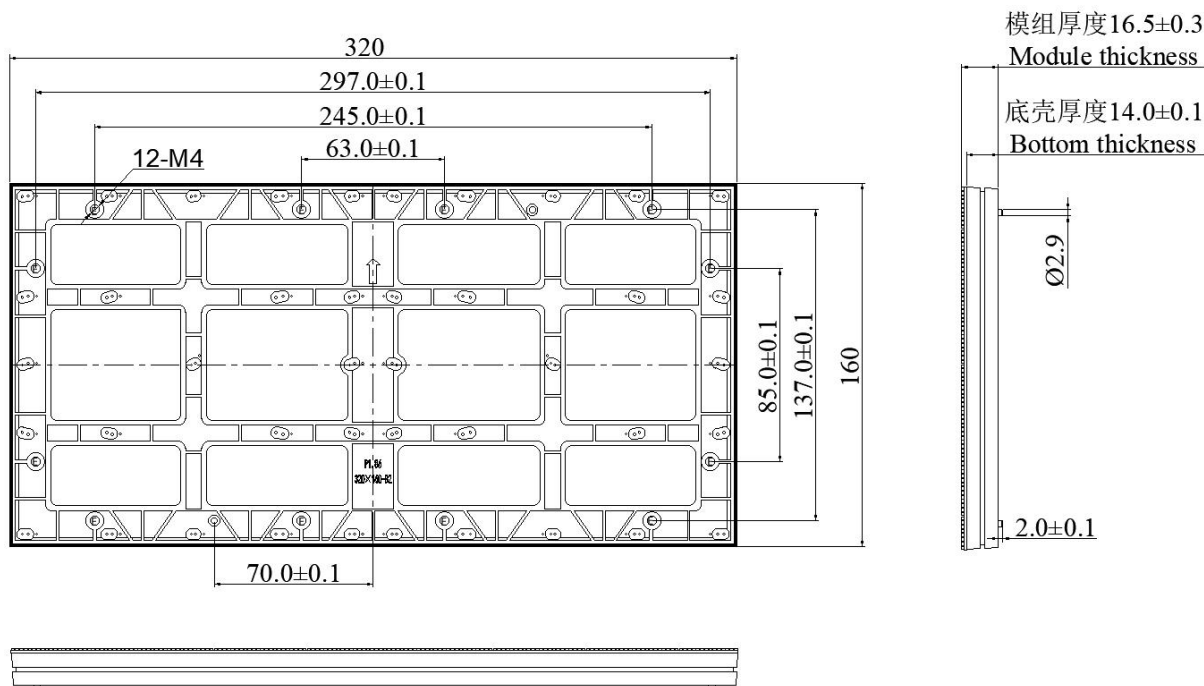
## 技术参数 Technical parameters

| 类别<br>Category                     | 项目<br>Item                          | 参数及指标<br>Parameters and standards                         |
|------------------------------------|-------------------------------------|-----------------------------------------------------------|
| 规格尺寸<br>Specifications<br>and size | 产品尺寸<br>Outline dimension           | L320mm×W160mm×D17mm                                       |
|                                    | 产品重量<br>Weight                      | 425±10g                                                   |
|                                    | 像素间距<br>Pixel pitch                 | 1.86mm                                                    |
|                                    | 分辨率<br>Resolution                   | 模组 Module 172×86<br>整屏 Screen 288906pixels/m <sup>2</sup> |
|                                    | 像素组成<br>Pixel composition           | SMD1515 RGB 全彩灯珠<br>SMD1515 RGB full-color LED lamp       |
|                                    | 信号接口<br>Signal interface            | HUB75×1pcs                                                |
|                                    | 电源接口<br>Power interface             | VH4P×1pcs                                                 |
| 光学参数<br>Optical<br>parameters      | 白平衡亮度<br>Luminance of white balance | ≥500cd/m <sup>2</sup>                                     |
|                                    | 对比度<br>Contrast ratio               | 5000:1                                                    |
|                                    | 色温<br>Color temperature             | 3000~21000K                                               |
|                                    | 可视角度<br>View angle                  | H≥160°, V≥140°                                            |
|                                    | 亮度均匀性<br>Luminance uniformity       | ≥97%                                                      |

| 类别<br>Category                              | 项目<br>Item                              | 参数及指标<br>Parameters and standards                     |
|---------------------------------------------|-----------------------------------------|-------------------------------------------------------|
|                                             | 色度均匀性<br>Color uniformity               | $\leq \pm 0.003$ Cx, Cy                               |
| 电气参数<br>Electrical parameters               | 工作电压<br>Supply voltage                  | 4.5~5V                                                |
|                                             | 最大电流<br>Maximum current                 | 5.0A                                                  |
|                                             | 平均功率<br>Average power                   | 模组 Module 8W/pcs@5V<br>整屏 Screen 180W/m <sup>2</sup>  |
|                                             | 最大功率<br>Maximum power                   | 模组 Module 25W/pcs@5V<br>整屏 Screen 542W/m <sup>2</sup> |
|                                             | 供电方式<br>Power supply method             | AC100-240V, 50/60Hz                                   |
|                                             | 对地漏电流<br>Earth leakage current          | $\leq 3.5\text{mA/m}^2$                               |
| 处理性能<br>Processing performance              | 刷新率<br>Refresh ratio                    | $\geq 3840\text{Hz}$                                  |
|                                             | 换帧频率<br>Refresh frame frequency         | 50~60Hz                                               |
|                                             | 扫描方式<br>Scanning mode                   | 1/86 S、1/43 S                                         |
|                                             | 灰度等级<br>Gray scale                      | 14bit                                                 |
| 环境要求<br>Environmental requirements          | 存储环境温度<br>Storage temperature           | -20℃~+60℃                                             |
|                                             | 存储环境湿度<br>Storage humidity              | 10%~60%RH<br>无结露 No knot dew                          |
|                                             | 工作环境温度<br>Operating temperature         | -20℃~+40℃                                             |
|                                             | 工作环境湿度<br>Operating humidity            | 10%~60%RH<br>无结露 No knot dew                          |
| 其他性能及使用<br>方法<br>Other properties and usage | 防护等级<br>IP Grade                        | N/A                                                   |
|                                             | PCB 阻燃等级<br>PCB Flame-rating            | UL94 V-0                                              |
|                                             | 平均失效间隔工作时间<br>Mean time between failure | MTBF(m <sub>1</sub> ) $\geq 5000\text{h}$             |
|                                             | 整屏像素失控率                                 | $P_z \leq 1/10000$                                    |

| 类别<br>Category             | 项目<br>Item                                                   | 参数及指标<br>Parameters and standards |
|----------------------------|--------------------------------------------------------------|-----------------------------------|
|                            | Full screen pixel out of control rate                        |                                   |
|                            | 区域像素失控率<br>Area Pixel Defect Rate                            | $P_Q \leq 3/10000$                |
|                            | 维护方式<br>Maintenance mode                                     | 前维护<br>Front maintenance          |
|                            | 带载数量<br>Load quantity                                        | MAX6pcs@5V 40A<br>MAX12pcs@5V 80A |
| 参考标准<br>Reference standard | SJT 11141-2017、SJT 11281-2017、GB/T4943.1-2022、GB17625.1-2022 |                                   |

## 产品尺寸孔位图 Outline dimension (mm)



## 产品使用注意事项 Cautions

产品存储、安装、使用、维护等过程须参照《产品使用说明书》。

The processes of product storage, installation, usage, and maintenance must refer to the "Product Instruction Manual".

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