



P27L Liquid Crystal Display Monitor

User Guide



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Enterprise management No.: GVT2021008

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Product Features

The P27L monitor adopts active matrix technology, Thin Film Transistor (TFT), IPS liquid crystal display panel and KFS-LED backlight.

Monitor features include:

- 27-inch visible area (measured diagonally)
3840 × 2160 (16:9) resolution, 10-bit color depth; supports full-screen display at lower resolutions
- Color gamut coverage: 99% sRGB, 94% DCI-P3
- Maximum overall brightness up to 400 nits
- Digital connectivity via USB Type-C, HDMI and DisplayPort
- The USB Type- C cable delivers up to 65W power supply to compatible laptops through USB Power Delivery protocol, while transmitting video and data signals. Compatible with Thunderbolt 3 / USB4
- High-strength integrated glass structure design
- Detachable stand and 100mm VESA™ mounting holes
- Equipped with 2 downstream USB Type- C data expansion ports
- HDR support
- Software-based blue light filtering function
- ΔE -Delta-E <2
- E-Mode Paper-like Black-and-White Grayscale Display Mode

Specifications

<i>Kuycon P27L</i>			
Product Name	Design LCD Monitor	Color Gamut	99%sRGB 94%DCI-P3
Screen Size	27 Inches	Brightness	Full Screen 400cd/m ²
Aspect Ratio	16:9	Contrast Ratio	1000:1
Panel Type	IPS	Response Time	GTG 8ms
Resolution	3840x2160	Screen Coating	3H Anti-glare Matte
Pixel Density	163PPI	Operating Voltage	AC 100-240V(50/60Hz)
Refresh Rate	60Hz	Power Consumption	Typical: 35W, Max:140W
Color Depth Support	10-bit, 1.07 Billion Colors	Other Features	USB-HUB
HDR	HDR10	Panel Surface	4-sided Ultra-narrow Bezel Panel
Body Material	ABS Plastic & Glass Rear Cover	USB	USB2.0
Audio Interface	3.5mm Audio Interface	Stand Type	VESA 100mm*100mm
Weight	4.55KG(Body only, stand excluded)	Stand Functions	Height Adjustable & Tilttable
HDMI	HDMI2.0	Power Adapter	Built-in Power Supply
DP	DP1.4	Remote Control	IR Remote Control (with battery)
USB-C	USB-C 【PD 65W】	User Manual	Paper User Manual*1

Views



Front View



Side View



Rear View (Simplified Version)

Dimensions (H×W×D) = 355mm*610mm*19mm Weight=4.55kG (excluding stand)

*Appearance data may have production tolerances due to measurement variations.

Resolution Specifications

Model	P27L
Horizontal Scan Range	88 kHz to 178 kHz(Auto)
Vertical Scan Range	24 kHz to 60 kHz(Auto)
Maximum Resolution	3840 x 2160 60Hz
HDMI Supported Video Modes	480p、480i、576p、576i、720p、1080i、1080p、QHD、UHD 4K
DP Supported Video Modes	480p、480i、576p、576i、720p、1080i、1080p、QHD、UHD
USB-C Supported Video Modes	480p、480i、576p、576i、720p、1080i、1080p、QHD、UHD

Note: The resolution of 3840x2160@60Hz of this display needs to be supported by new GPU via Displayport 1.2/1.4.

*It is recommended to connect the monitor via DP or USB-C port, compatible with new Thunderbolt™3/4 and USB4 devices.

Windows Operating System

Kuycon P27L 显示器 1: 已连接到 NVIDIA GeForce GTX3060 12GB	
桌面分辨率	3840 x 2160, 60Hz
有源信号分辨率	3840 x 2160, 60Hz
位深度	10位 (递色)
颜色格式	RGB
颜色空间	标准动态范围 (SDR)
HDR 认证	未找到 有关 HDR 认证的详细信息
峰值亮度	400 尼特
显示器1的显示适配器属性	

MacOS Operating System

Apple M4:

芯片组型号:	Apple M4
类型:	GPU
总线:	内建
核总数:	10
供应商:	Apple (0x106b)
Metal支持:	Metal 4
显示器:	
Kuycon P27L:	
分辨率:	3840x2160
U看起来类似:	1920 x1280 @ 60.00Hz
主显示器:	是
镜像:	关
联机:	是
旋转:	支持

*Other operating systems require the GPU vendor's graphics driver to support HBR3 video mode output

Universal Interfaces

USB-C Upstream Port x1		Maximum Supported Resolution 3840 x 2160 60Hz Speed 480mbps USB-PD
USB-C Downstream Port x2		USB Downstream Data Expansion USB Speed 480mbps (5V 2.1A Power Delivery)
DisplayPort 1.4 x1		Maximum Supported Resolution 3840 x 2160 60Hz HDR HBR2 21.6Gbps(HDCP2.2)
HDMI2.0 x1		Maximum Supported Resolution 3840 x 2160 60Hz HDR 18Gbps(HDCP2.2)

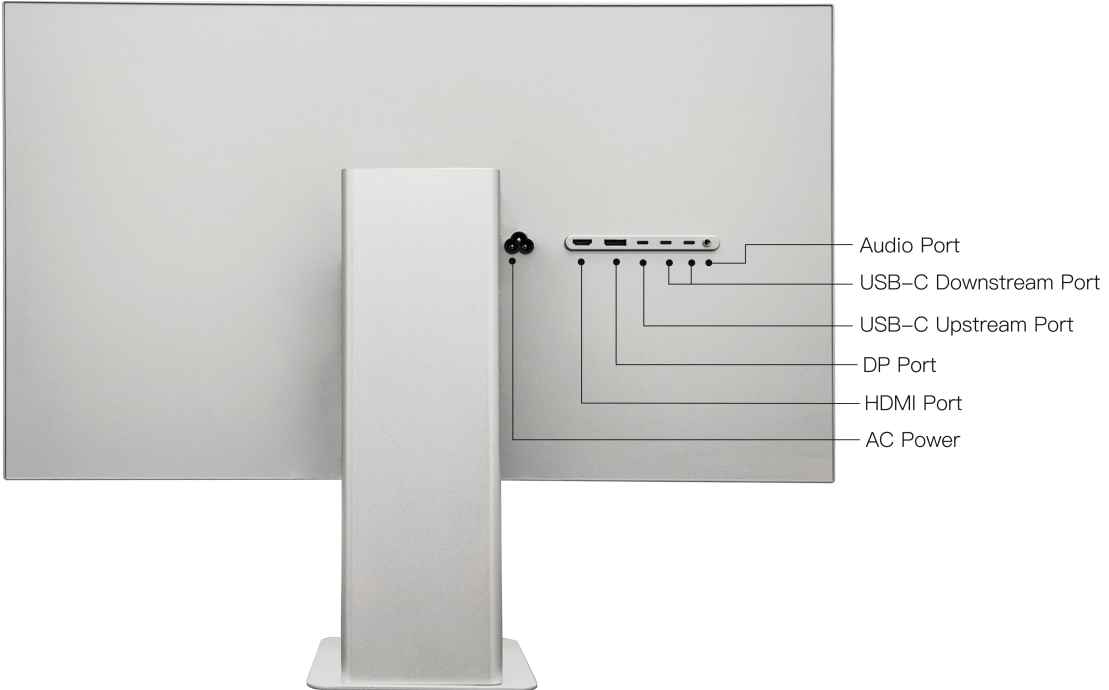
*USB-C Upstream Port, USB-Power Delivery compliant

PD3.0	100.00W	3.30-3.25
5.0472v		0.0000 A
		0.0000 W
☐	1	5.00V 3.00A
☐ -1V	2	9.00V 3.00A
☐ +1V	3	12.00V 3.00A
☐ -20mV	4	15.00V 3.00A
☐ +20mV	5	20.00V 5.00A
☒ back	☐ exit	

PDO Output Levels	5V-3A	9V-3A	12V-3A	15V-3A	20V-5A 20V-5A(Use E-Mark 5A cable)
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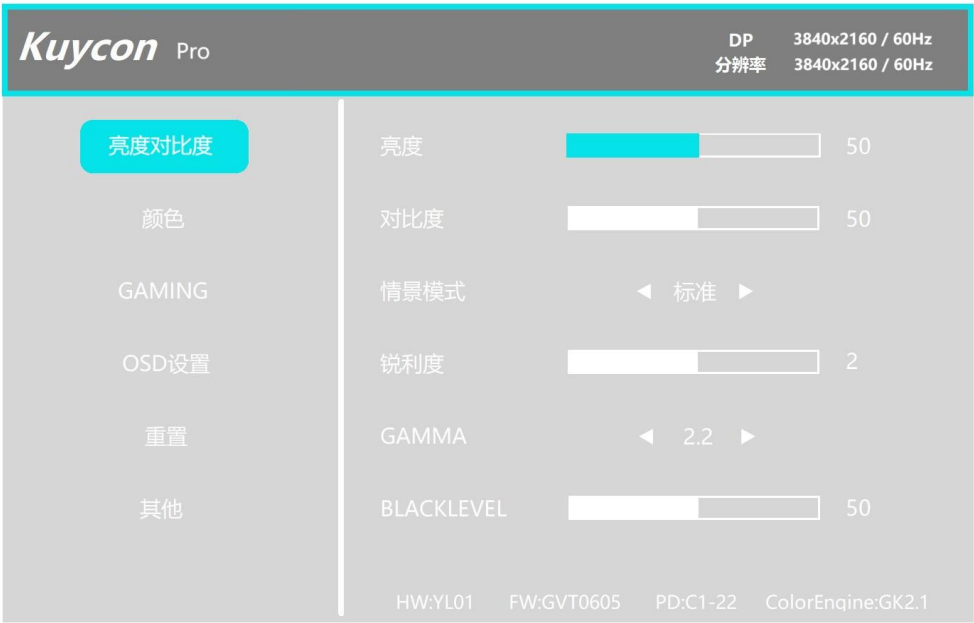
Monitor Settings

1. Connect the AC power cable 2. Connect the video signal 3. Connect USB peripheral devices

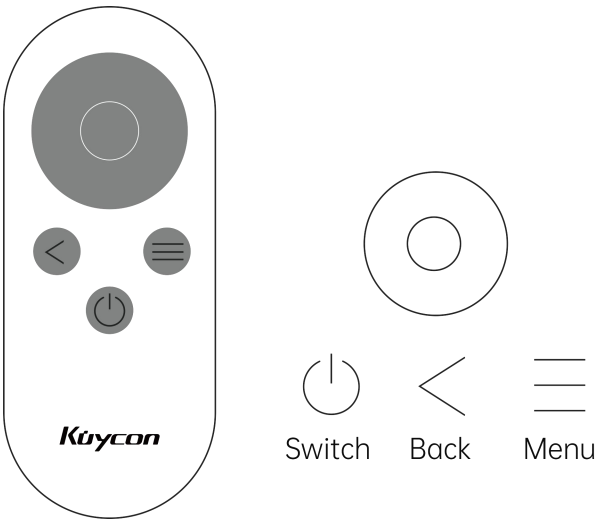


1	2	3	4	5	6	7
Audio	USB-C Downstream Port	USB-C Downstream Port	USB-C Upstream Port	DP	HDMI	AC Input

Operating Instructions (OSD)



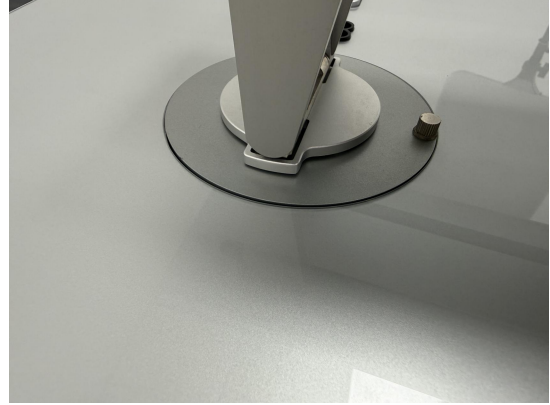
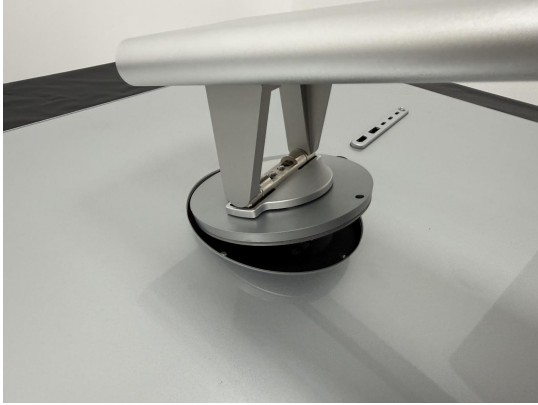
Instructions



Note: The graphical OSD can be set to transparent. For remote control models, only the power key and status indicator light are retained.

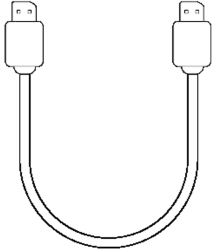
Installation Instructions

- Take out the stand and install it according to the VESA standard.

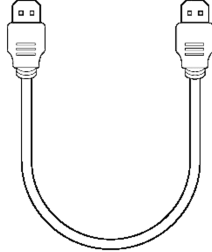


* When installing the stand, lay the panel face-down on a soft, cushioning material to avoid panel damage caused by pressure.

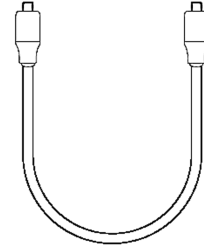
Accessories



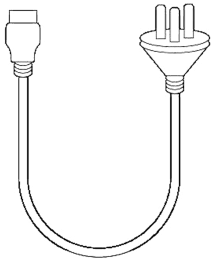
Displayport Cable 1.5m x 1



HDMI Cable 1.5m x 1



USB-C Cable 1m x 1



AC Cable 1.8m x 1

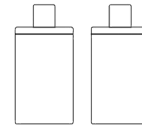
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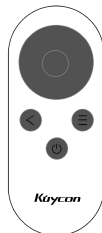
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Image is simulated only. 01/202208

Paper User Manual x 1



USB-C OTG Adapter x 2



Infrared Remote Control x1

Safety Instructions

I. The P27L monitor adopts a construction of ABS plastic, glass rear cover and aluminum alloy. During use, please ensure that the AC power cable is connected to a power socket with reliable grounding.



II. The internal electronic power components of the P27T monitor adopt contact passive heat dissipation through the housing. The device will feel warm during normal operation. When the PD fast charging outputs at full power, please ensure proper heat dissipation in the surrounding area.



III. The front panel of the monitor adopts full glass structure. Please avoid hitting or colliding with hard objects during use, so as to prevent cracking or damage.



IV. When performing daily maintenance and cleaning on the monitor panel coating, please refrain from using highly corrosive solutions.



FAQ

Hardware Platform Compatibility

The DP and USB-C ports of the monitor support 4K signal input under DP 1.2 / 1.4 HBR2 mode with one-cable solution. HDMI 2.0 only supports a maximum resolution of 4K. Hardware platforms compatible with 3840×2160 resolution are listed below. The monitor requires DP 1.2 / 1.4 signal input for 4K display.

Nvidia

Maxwell Architecture GPU	(Graphics card Series 6 / 7 / 9 require the latest official DP firmware update) e.g. GTX750 – 980 Ti
Pascal Architecture GPU	GTX1050-1080TI
Turing Architecture GPU	GTX1650-RTX2080TI (Graphics cards equipped with USB-C VRLink support direct connection via a Type-C cable)
Ampere Architecture GPU	RTX3050-4090

AMD

Polaris Architecture GPU	RX460-RX590
VEGA Architecture APU GPU and dGPU	VEGA8 VEGA56-VEGA Nano
RDNA/RDNA2 Architecture GPU	RedeonR7、RX5500-RX6900XT (Graphics cards with RDNA2 and USB-C support direct connection via a Type-C cable)

Intel

6-10th Gen Mobile Platform UHD iGPU	UHD/Iris/Iris Pro (Devices with Thunderbolt 3 support direct connection via Type-C cable)
11th Gen Mobile Platform Tiger Lake iGPU	Iris Xe (Devices with Thunderbolt 3 support direct connection via Type-C cable)
11th Gen Desktop Platform Tiger Lake iGPU	Iris Xe (Devices with Thunderbolt 3 support direct connection via Type-C cable)
12th Gen Platform UHD730/750/770 iGPU	All models support 4K60hz (Devices with Thunderbolt 3 support direct connection via Type-C cable)

Mac

Apple MAC AMD dGPU	MPB models released in 2016 and later with discrete graphics support 4K one-cable direct connection via Thunderbolt 3. 【For older MPB users: please note that a miniDP cable is required to connect to this monitor.】
Apple MAC Intel Integrated Graphics Series	All devices with 6th-generation Intel cores released in 2016 and later support 4K one-cable direct connection via Thunderbolt 3, e.g. 2016–2020 MacBook and MacBook Air.
Apple MAC M1/M2 Integrated Graphics Series	Full series supports 4K one-cable direct connection via Thunderbolt 3
Apple iPad Pro Series	Full series supports 4K one-cable direct connection via Thunderbolt 3
Apple iMac Series	2015+ Discrete Graphics Series Fully Supported

NUC

Intel nuc Series Hosts	NUC6-NUC13 and Hades Canyon all support 4K.
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Phone/Pad

Mobile Phones / Tablets	Nintendo SWITCH, Huawei MATE/P series, Smartisan series, Samsung S/NOTE series all support same-screen display or PC mode
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Other

Other Devices	Sony PS4 Pro / PS5 and Microsoft Xbox series support 4K@60HZ HDR via HDMI
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Full-Featured USB-Type-C Interface & Thunderbolt 3/4

The monitor's USB-C port transmits video via DP 1.4 Alt Mode, combined with USB data transmission and PD reverse fast charging. It is broadly compatible but does not support Thunderbolt 3/4 protocol. When connecting to a host's Thunderbolt 3/4 port, 4K resolution availability depends on the GPU video port linked to the computer's USB-C interface.

Users need to verify two conditions for their device's USB-C port: Whether the port supports video output; Whether the graphics card supports a maximum 4K resolution.

When transmitting 4K video signals over a USB-C cable, the actual operating bandwidth reaches approximately 16Gbps, which places strict requirements on cable signal quality. USB 3.1 Gen2 / USB 3.2 Gen2 compliant cables with reliable build quality are required. It is recommended to select high-quality cables to avoid connection issues. For devices requiring 5A 100W reverse power delivery, please use 5A cables equipped with an E-Marker chip.

HDR Function Compatibility

The HDR function of the P27L monitor is set to Auto by default and can be manually turned off. The HDMI port complies with the HDMI 2.0 VESA HDR10 specification. The DP and USB-C ports support HDR and are compliant with the VESA HDR10 standard. HDR is available on Windows 10 (version 1803 or later) with a compatible graphics card. HDR can be activated via media players or games within the Windows system, and the monitor will automatically switch to HDR display mode. A black screen lasting 1 to 2 seconds during mode switching is a normal phenomenon.

For macOS, users may enable the High Dynamic Range option in display settings to check HDR compatibility based on device support. Certain Apple Mac devices may not be able to enable the HDR function.

*

Manually enabling HDR in the system display settings will result in visible visual differences compared with standard mode, which is normal.
When HDR is enabled for high dynamic range content, the monitor's backlight will be activated at its maximum operating level.
After exiting HDR video playback or HDR game content, the monitor will automatically switch back to the default settings.

Firmware Description

Firmware Version	202310v2.1	Last V1.1 20230427
Compile Date	20231005	/
Code Version	49Hv00.2	/
Project	UHD_hdcB2022 0x85	Gravity Tech P-24 UHD
Item	Realtek Team2 CL.Zhang	Supervise by Ehen
Checksum	0x7AD2	/
Keypad Control	5Key & IR(4DB2)	/
GPIO Extension	off	Desktop Light off, RGB off
HDCP	2.2 / 20190416	

Original Revised Firmware of Auxiliary Control Program

USB-PowerDelivery	SW.PD3.0 1C100W-01	HW.1C100W
CC Logic Controller	SW.Alt 4lane xd16	HW.C1-22
E-Mark	SW.DFP-Gen2 5A d01	HW.332G1

V2.1 Data Upgrade & Adjustment Items

3D Lut	0xb4 resh1	Upgrade 20211124V1.1
Gamma	1.8 2.0 2.2 2.4 2.6 KXL	Upgrade 20220223V1.0
HDR Date	10bit 420 BT.2020 fix KXL	/
CCT	6500K 7500K 9300K 6800K	KOL-CA410 Pass

V2.1Firmware Update Description

Model: Kuycon P27L

Firmware Version: 202310v2.2

Firmware Name: P27L-1104.bin

Check Code: 0x7AD2

V2.1 Debug & Update Contents

1. Optimized and updated the 3D LUT table based on V1.1 version, and adopted a new color space for better color performance.
2. Upgraded the original factory source code to Code Version 3.2.
3. Adjusted the preset parameters of gamma curve to optimize gradient and dark field display.
4. Updated HDR extended data, optimized new benchmark test calls and enhanced overall HDR compatibility.
5. Calibrated and adjusted the preset color temperature channel for more accurate color temperature output.

6. Updated the firmware and protocol handshaking timing of the USB-C auxiliary processor; upgraded the CC logic controller firmware to adapt to the sleep and wake-up logic of Apple M1 platform with macOS 11.6 and above systems.
7. Optimized the backlight DC dimming strategy, adjusted the maximum threshold current limit to effectively control overall power consumption.
8. Disabled the expansion and debug functions of GPIO6 (0xd1) and GPIO12 (0xfe).
9. Enabled the new standby control mechanism for USB HUB chip to reduce standby power consumption.
10. Added black field adjustment option in OSD menu; the default factory color temperature of firmware is set to approximately 6800K–7000K.

V2.2 Debug & Update Contents

1. Modified the standby and power-saving deep sleep mechanism to resolve the sleep-wake issue of some graphics cards or laptops.
2. Updated EDID to fix the issue of no display when connecting for the first time with Nvidia Ampere architecture 30-series graphics cards.
3. Updated the firmware of the USB-C coprocessor, fixed the transient current protection mechanism for PD charging, and improved the charging compatibility of some laptops. Added new compatibility codes to support more USB-C devices.
4. Performed more color block coordinate sampling and calibration, and enabled automatic color uniformity compensation.
5. Updated based on the newly added IPS panel Gamma correction.
6. Optimized the USB-C interface to improve the compatibility of the extended display mode for iPads (M1/M2) running iPadOS 16 Beta.
7. Optimized the sRGB color gamut limiting mode.
8. Adapted the color to match macOS system requirements.
9. Added the black-and-white grayscale display mode E-Mode, which is similar to electronic screen display and suitable for black-and-white reading and eye protection.

Color Report

●Model Information

Model: Kuycon P27L

Version: A01 FW02.1

●Measurement Platform

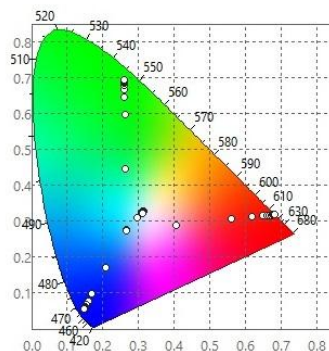
Test Equipment	Konica Minolta CA-410
Color Temperature	6500K
Color Gamut	DCI-P3
Gamma	2.2
Signal Type	USB-C/Displayport

●Measurement Results

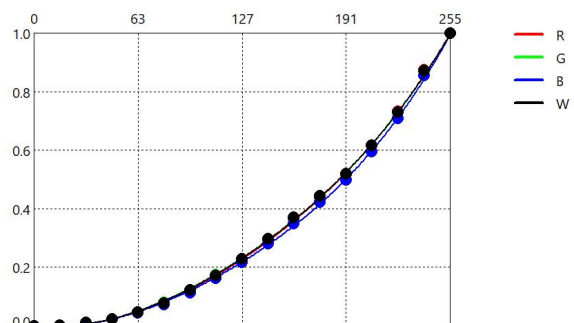
Avg ΔE 1.47

	R	G	B	W
X	0.674468	0.297392	0.145978	0.316764
Y	0.324935	0.630931	0.058983	0.328533

Color Gamut



GammaCurve



Note: After collecting feedback from multiple users, the majority reported that the factory-default color temperature at D65 6500K appeared too warm. Therefore, during calibration, the factory preset color temperature has been adjusted to the User Custom mode, with a color temperature range of approximately 6800–7000K. Additionally, due to the characteristics of the glossy panel, the Gamma value has been set slightly above the standard 2.2 to better preserve image detail in environments with ambient light reflections. These parameters are a balanced compromise between color accuracy and visual preference, designed to satisfy most users' viewing experience. If you require recommended settings, please contact official technical support or refer to the color configuration guide provided by our company.