

Colorlight

U15 Max

Video Splicer

Specification V1.0



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Revision History

| Version | Description | Date |
|---------|---------------|------------|
| V1.0.0 | First edition | 2025.09.26 |

01 PRODUCT INFORMATION

1.1 Overview

The U15 Max is a fully integrated video splicer powered by a robust FPGA architecture and secure, stable software, making it an ideal choice for large-scale events, convention centers, stadiums, stage performances, traffic monitoring, and commercial exhibitions.

With a modular design, the U15 Max features 40 slots supporting 18 types of boards for flexible combination. This unit supports up to 520 million pixels and accommodates 20 to 30 input boards and 10 to 20 output boards. Input ports include HDMI, DisplayPort (DP), SDI, CVBS, VGA and IP, and output ports support Gigabit Ethernet (GbE), 10G fiber, HDMI, and DVI.

The U15 Max is capable of managing various screen types, delivering 4K HDR ultra-high-quality video, and performing 10-bit video input and processing. It supports video source cropping, scaling, along with the addition of various display elements, such as background images, OSD, and logos. Additionally, the Universe series offers redundancy through fiber ports, Ethernet ports, and power supplies, along with dual 4K UHD video preview and monitoring, health monitoring, and email alerts. All these make it easy to set up fine-pitch LED video walls, LCD video walls, and projection screens.

The Universe series lets you control and manage devices across multiple platforms, such as Windows, macOS, and Linux, all through a web app. With an intuitive user interface, the series enables smooth workflows including real-time collaboration and modular permission management.

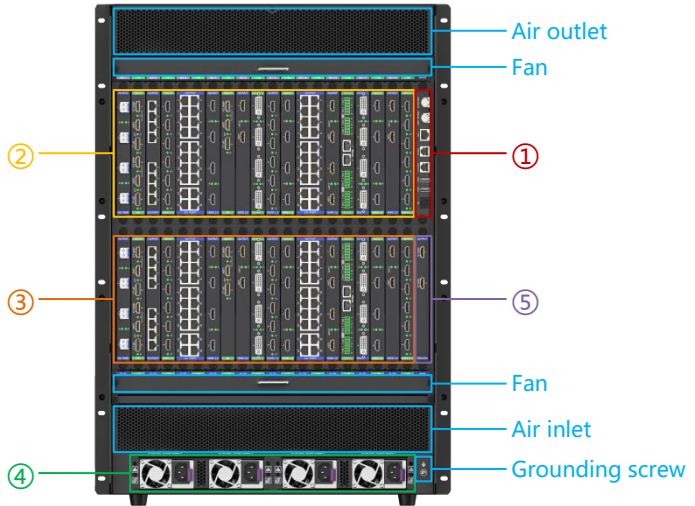
1.2 Appearance

Front Panel



| No. | Name | Description |
|-----|--------------|---|
| 1 | Touch screen | Displays device status and supports parameter configuration and device operation. |
| 2 | Power switch | Turns the device on or off. |

Rear Panel



| No. | Name | Description |
|-----|---------------|---|
| 1 | Main board | GENLOCK IN port, GENLOCK LOOP port, RS-232 serial port, 2x USB 2.0 port, GbE port, 3D port. |
| 2 | Input board | Supports 10 types of input boards. <ul style="list-style-type: none"> All slots from I-1 to I-20 and even-numbered slots from I-22 to I-40 support input boards. Odd-numbered slots from I-1 to I-20 are I/O slots, supporting both input and output boards. |
| 3 | Output board | Supports 8 types of output boards. Odd-numbered slots from O-21 to O-39 are available for use. |
| 4 | Power supply | AC 100-240V, 50/60Hz, supports up to four power supplies (two standard, two optional). |
| 5 | Preview board | 2×HDMI 2.0 port: Connects to external monitors for input preview and output monitoring. |



Slot Silkscreen Marking:

- Slots marked with "I-x" are for input boards, with "I" indicating input and "x" representing the slot number. For example, "I-1" refers to the first input slot, which is designated for an input board.
- Slots marked with "O-x" are for output boards, with "O" indicating output and "x" representing the slot number. For example, "O-17" refers to the 17th output slot, which is designated for an output board.
- Slots marked with "I/O-x" can be used for either input or output boards.
- Slot marked with "MVR" is designated for the preview board.

02 FEATURES

Modular Design Flexible Combination

- 3 LED screen solutions:
 - 10G fiber output: Loads up to 26 million pixels per board and 520 million pixels per device.
 - 5G Ethernet output: Loads up to 23.6 million pixels per board and 472 million pixels per device.
 - 1G Ethernet output: Loads up to 13 million pixels per board and 262 million pixels per device.
- LCD/Projection screen solutions:
 - HDMI 2.0 output: Loads up to 2× 4K×2K@60Hz per board.
 - HDMI 1.4 output: Loads up to 4× 4K×1K@60Hz per board.
 - HDMI 1.3 output: Loads up to 6× 2K×1K@60Hz per board.
 - DVI output: Loads up to 4× 2K×1K@60Hz per board.
- Supports LED, LCD, and projection screen solutions simultaneously.
- Up to 17 types of hot-swappable I/O boards. Input slots accommodate 20 to 30 boards, and output slots accommodate 10 to 20 boards.
 - Input ports: HDMI 2.0, DP 1.2, 12G-SDI, IP.
 - Output ports: HDMI 2.0, HDMI 1.4, HDMI 1.3, DVI, 10G fiber, 5G Ethernet, 1G Ethernet.
- Monitors the status of all boards in real time.
- Input and output frame rates range from 23.98Hz to 240Hz.

Multiple Screen Management

- Screen group management: Up to 20 LCD or LED screen groups.
- Custom resolution per screen group.
- User-definable parameters per screen: Display elements, colors, presets, frame rates, and more.
- Synchronized splicing among screens, with no tearing, delay, or frame loss.
- Simultaneous use of 10G fiber ports and 1G Ethernet ports within the same screen.

- Advanced seam correction for LED video walls.
- Bezel compensation for LCD video walls.

4K HDR Impeccable Visuals

- DCI 4K: 4096×2160@60Hz.
- HDR:
 - Supports HDR 10, compliant with SMPTE ST 2086/2084.
 - Supports HLG.
- 8-bit and 10-bit color depth.
- Maximum frame rate: 240Hz.

Powerful Video Processing

- Multi-layer display:
 - 320× 2K or 80× 4K layers per device.
 - 16× 2K or 4× 4K layers per board.
- Input scaling and cropping.
- Layer roaming and free splicing.
- Automatic and manual frame rate multiplication.
- Fade in/out.
- 3D display.
- Precise color management.
- Multiple color formats:
 - RGB, YCbCr444, YCbCr422, YCbCr420.
- Color management by input sources, output ports, and screens.
 - Adjusts brightness, color temperature, saturation, hue, contrast, brightness compensation, and RGB.

Diversified Display

- BKG: UHD images with a maximum width/height of 32,768 pixels. Background does not use any layers.
- OSD (image and text):
 - Scrolling images and text.
 - Adjustable OSD transparency for superimposing.

- Custom direction, speed, and style.
- Signal logo: Supports adding image or text logos for identifying input sources.
- Advanced test patterns: Includes up to 15 built-in test patterns, each capable of displaying any color.

All-Round Multiviewer

- 2 × HDMI 2.0 ports: Simultaneous support for 4K ultra HD preview and monitoring.
- Software-based preview: Supports device control as well as preview and monitoring using an Ethernet cable.
- HD LCD on front panel: On-device input preview and output monitoring, with no external devices required.

Web Control Global Management

- Cross-platform web control that enables multi-user collaboration.
- Screen/device management, input configuration, and splicing settings.
- Screen mapping, screen parameter transmission, and advanced seam correction.
- Control via the Kylin VICP (Visualization Intelligent Control Platform) mobile app.
- Intuitive user interface with on-screen instructions.
- Up to 40,000 presets: Real-time application and scheduled loop.

Secure Stable

- Dual power supplies for 24/7 uptime.
- Parameter snapshot and redundancies via Ethernet, fiber, and devices.
- Permission management and log record.
- Real-time monitoring and alerts:
 - Monitors device status, power status, and fan speed.
 - Monitors screen connection status, runtime, temperature and humidity, and bit error rate.
 - Monitoring through web, app, and front panel.

03 APPLICATIONS



Note: The image displayed is for illustrative purposes and may vary from the actual product.

04 BOARD SPECIFICATIONS

4.1 Input Boards

10 types of input boards available for flexible configuration:

| Name | Model |
|-----------------------------------|--------------------|
| U_2×HDMI 2.0+2×DP 1.2 input board | U_IN_2HDMI20_2DP12 |
| U_1×HDMI 2.0+1×DP 1.2 input board | U_IN_1HDMI20_1DP12 |
| U_2×12G-SDI input board | U_IN_2×12GSDI |
| U_1×12G-SDI input board | U_IN_1×12GSDI |
| U_2×IP input board | U_IN_2IP |
| U_4×3G-SDI input board | U_IN_4×3GSDI |
| U_4×HDMI1.3 input board | U_IN_4HDMI13 |
| U_Control board | U_IN_CENTRAL_CTRL |
| U_4×AUDIO input board | U_IN_4AUDIO |
| U_2×VGA+2×CVBS input board | U_IN_2VGA_2CVBS |

* Visit the Colorlight official website for updates on upcoming boards.

Number of input boards per device:

- Max. input boards: 30

Name: U_2×HDMI 2.0+2×DP 1.2 Input Board

Model: U_IN_2HDMI20_2DP12



Two groups of 4K input ports: Each group includes 1×HDMI 2.0 & LOOP ports, and 1×DP 1.2 port. For each group, both HDMI 2.0 and DP 1.2 can be connected simultaneously, but only one can be displayed.

2×HDMI2.0

- Backwards compatible with HDMI 1.4/1.3.
- Each port supports a maximum pixel clock of 600MHz; video inputs up to 4096×2160@60Hz/8192×1080@60Hz.
- Supports custom resolutions through EDID configuration:
 - Maximum width: 4096 pixels (when the width is 4096 pixels, supported resolutions include 4096 × 2160@60Hz, 4096 × 2160@50Hz, and 4096×2160@30Hz).
 - Maximum height: 4095 pixels (2160×4095@60Hz).
- Width limit: 8192 pixels (forced by external signal). Height limit: 8188 pixels (forced by external signal).
- 8/10/12-bit input.
- Color formats: RGB, YCbCr444, YCbCr422, YCbCr420.
- Frame rates: 23.98Hz ~ 240Hz.
- Supports HDR10 and HLG.
- Supports HDCP2.2 and HDCP1.4.
- Supports embedded audio input.
- Progressive only.

2×HDMI2.0_LOOP

- 2×HDMI 2.0 loop-out ports.

2×DP1.2

- Backwards compatible with DP 1.1.
- Each port supports a maximum pixel clock of 600MHz; video inputs up


Details

| | |
|--------------------------|---|
| | <p>to 4096×2160@60Hz/8192×1080@60Hz.</p> <ul style="list-style-type: none"> • Supports custom resolutions through EDID/DisplayID configuration: <ul style="list-style-type: none"> - Maximum width: 8192 pixels (8192×1080@60Hz). - Maximum height: 8092 pixels (1024×8092@60Hz). • Width limit: 8192 pixels (forced by external signal). Height limit: 8092 pixels (forced by external signal). • 8/10-bit input. • Color formats: RGB, YCbCr444, YCbCr422. • Frame rates: 23.98Hz ~ 240Hz. • Supports HDR10 and HLG. • Supports HDCP2.2 and HDCP1.4. • Supports embedded audio input. • Progressive only. <p>Status LEDs</p> <ul style="list-style-type: none"> • Off: Power supply failure. • Solid green: Normal power supply. • Blinking green: Normal video source input. <p>Specifications</p> <ul style="list-style-type: none"> • Weight: 500 g (17.6 oz) • Dimensions: 193 mm (7.6")×243.2 mm (9.6")×19.82 mm (0.8") • Power consumption: 26W |
| <p>Tech Specs</p> | <ul style="list-style-type: none"> • For video specifications, refer to Sections 5.1.1 and 5.1.2. |


| | | |
|---|--|---|
| <p>Name: U_1×HDMI 2.0+1×DP 1.2 Input Board</p> | | <p>Model: U_IN_1HDMI20_1DP12</p> |
| <p>Details</p> | <div data-bbox="253 1124 899 1194" data-label="Image"> </div> <p>One groups of 4K input ports: Each group includes 1×HDMI 2.0 & LOOP ports, and 1×DP 1.2 port. For each group, both HDMI 2.0 and</p> | |

| |
|---|
| <p>DP 1.2 can be connected simultaneously, but only one can be displayed.</p> <p>1×HDMI2.0</p> <ul style="list-style-type: none">• Backwards compatible with HDMI 1.4/1.3.• Each port supports a maximum pixel clock of 600MHz; video inputs up to 4096×2160@60Hz/8192×1080@60Hz.• Supports custom resolutions through EDID configuration:<ul style="list-style-type: none">- Maximum width: 4096 pixels (4096×2160@60Hz).- Maximum height: 4095 pixels (2160×4095@60Hz).• Width limit: 8192 pixels (forced by external signal). Height limit: 8188 pixels (forced by external signal).• 8/10/12-bit input.• Frame rates: 23.98Hz ~ 240Hz.• Supports HDR10 and HLG.• Color formats: RGB, YCbCr444, YCbCr422, YCbCr420.• Supports HDCP2.2 and HDCP1.4.• Supports embedded audio input.• Progressive only. <p>1×HDMI2.0_LOOP</p> <ul style="list-style-type: none">• 1×HDMI 2.0 loop-out ports. <p>1×DP1.2</p> <ul style="list-style-type: none">• Backwards compatible with DP 1.1.• Each port supports a maximum pixel clock of 600MHz; video inputs up to 4096×2160@60Hz/8192×1080@60Hz.• Supports custom resolutions through EDID/DisplayID configuration:<ul style="list-style-type: none">- Maximum width: 8192 pixels (8192×1080@60Hz).- Maximum height: 8092pixels (1024×8092@60Hz).• Width limit: 8192 pixels (forced by external signal). Height limit: 8092 pixels (forced by external signal).• 8/10-bit input.• Frame rates: 23.98Hz ~ 240Hz.• Supports HDR10 and HLG. |
|---|


| | |
|-------------------|---|
| | <ul style="list-style-type: none"> • Color formats: RGB, YCbCr444, YCbCr422. • Supports HDCP2.2 and HDCP1.4. • Supports embedded audio input. • Progressive only. <p>Status LEDs</p> <ul style="list-style-type: none"> • Off: Power supply failure. • Solid green: Normal power supply. • Blinking green: Normal video source input. <p>Specifications</p> <ul style="list-style-type: none"> • Weight: 480 g (16.9 oz) • Dimensions: 193 mm (7.6")×243.2 mm (9.6")×19.82 mm (0.8") • Power consumption: 20W |
| Tech Specs | <ul style="list-style-type: none"> • For video specifications, refer to Sections 5.1.1 and 5.1.2. |

| | | |
|--------------------------------------|---|-----------------------------|
| Name: U_2×12G-SDI Input Board | | Model: U_IN_2×12GSDI |
| Details |  <p>2×12G-SDI</p> <ul style="list-style-type: none"> • Backwards compatible with 6G-SDI, 3G-SDI (Level A/B), HD-SDI, and SD-SDI. • Supports SMPTE ST-2082-1 (12G), ST-2081-1 (6G), ST-424 (3G), ST-292 (HD), and ST-259 (SD) standards. • Each port supports a maximum video input of 4096×2160@60Hz. • 10-bit input. • Frame rates: 23.98Hz ~ 60Hz. • Color format: YCbCr422. • Supports signal de-interlacing: 480i/576i/1080i. <p>2×12G-SDI_LOOP</p> | |


| | |
|-------------------|---|
| | <ul style="list-style-type: none"> • 2×12G-SDI loop-out ports. <p>Status LEDs</p> <ul style="list-style-type: none"> • Off: Power supply failure. • Solid green: Normal power supply. • Blinking green: Normal video source input. <p>Specifications</p> <ul style="list-style-type: none"> • Weight: 455 g (16.0 oz) • Dimensions: 193 mm (7.6")×243.2 mm (9.6")×19.82 mm (0.8") • Power consumption: 11W |
| Tech Specs | <ul style="list-style-type: none"> • For video specifications, refer to Section 5.1.3. |

| | | |
|--------------------------------------|--|-----------------------------|
| Name: U_1×12G-SDI Input Board | | Model: U_IN_1×12GSDI |
| Details |  <p>1×12G-SDI</p> <ul style="list-style-type: none"> • Backwards compatible with 6G-SDI, 3G-SDI (Level A/B), HD-SDI, and SD-SDI. • Supports SMPTE ST-2082-1 (12G), ST-2081-1 (6G), ST-424 (3G), ST-292 (HD), and ST-259 (SD) standards. • Each port supports a maximum video input of 4096×2160@60Hz. • 10-bit input. • Frame rates: 23.98Hz ~ 60Hz. • Color format: YCbCr422. • Supports signal de-interlacing: 480i/576i/1080i. <p>1×12G-SDI_LOOP</p> <ul style="list-style-type: none"> • 1×12G-SDI loop-out ports. <p>Status LEDs</p> <ul style="list-style-type: none"> • Off: Power supply failure. | |


| | |
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| | <ul style="list-style-type: none"> • Solid green: Normal power supply. • Blinking green: Normal video source input. <p>Specifications</p> <ul style="list-style-type: none"> • Weight: 435 g (15.3 oz) • Dimensions: 193 mm (7.6")×243.2 mm (9.6")×19.82 mm (0.8") • Power consumption: 10W |
| Tech Specs | <ul style="list-style-type: none"> • For video specifications, refer to Section 5.1.3. |

| Name: U_4×3G-SDI Input Board | | Model: U_IN_4×3GSDI |
|------------------------------|--|---------------------|
| Details |  <p>4×3G-SDI</p> <ul style="list-style-type: none"> • Backwards compatible with HD-SDI and SD-SDI. • Supports SMPTE ST-424 (3G), ST-292 (HD), and ST-259 (SD) standards. • Each port supports a maximum video input of 2048×1080@60Hz. • Supported formats: Level A and Level B. • 10-bit input. • Frame rates: 23.98Hz ~ 60Hz. • Color format: YCbCr422. • Supports signal de-interlacing: 480i/576i/1080i. <p>Status LEDs</p> <ul style="list-style-type: none"> • Off: Power supply failure. • Solid green: Normal power supply. • Blinking green: Normal video input. <p>Specifications</p> <ul style="list-style-type: none"> • Weight: 470 g (16.6 oz) • Dimensions: 193 mm (7.6")×243.2 mm (9.6")×19.82 mm (0.8") • Power consumption: 9W | |

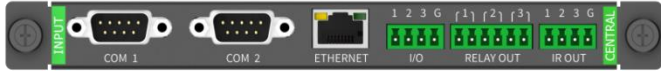
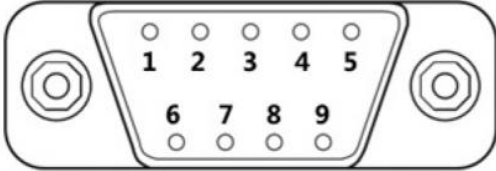
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|------------|---|
| | |
| Tech Specs | <ul style="list-style-type: none"> • For video specifications, refer to Section 5.1.4. |

| Name: U_4×HDMI 1.3 Input Board | | Model: U_IN_4HDMI13 |
|--------------------------------|---|---------------------|
| Details |  <p>4×HDMI1.3</p> <ul style="list-style-type: none"> • Each port supports a maximum pixel clock of 165MHz; video inputs up to 2048×1080@60Hz. • Supports custom resolutions through EDID configuration: <ul style="list-style-type: none"> - Maximum width: 4095 pixels (4095×512@60Hz). - Maximum height: 4095 pixels (512×4095@60Hz). • Width/height limit: 4096 pixels (forced by external signal). • 8-bit input. • Frame rates: 23.98Hz ~ 120Hz. • Color formats: RGB, YCbCr444, YCbCr422. • Supports HDCP1.4. • Supports embedded audio input. • Progressive only. <p>Status LEDs</p> <ul style="list-style-type: none"> • Off: Power supply failure. • Solid green: Normal power supply. • Blinking green: Normal video input. <p>Specifications</p> <ul style="list-style-type: none"> • Weight: 395 g (13.9 oz) • Dimensions: 193 mm (7.6")×243.2 mm (9.6")×19.82 mm (0.8") | |

| | |
|------------|---|
| | <ul style="list-style-type: none"> • Power consumption: 12W |
| Tech Specs | <ul style="list-style-type: none"> • For video specifications, refer to Section 5.1.5. |

| Name: U_2xIP Input Board | | Model: U_IN_2IP | |
|--------------------------|--|-----------------|--|
| Details |  | | |
| | <p>Use either ETH1 or FIBER1, and either ETH2 or FIBER2. Ports are self-adaptive, with fiber ports preferred.</p> <p>2×RJ45 GbE ports</p> <ul style="list-style-type: none"> • Supports independent connection to network video sources and redundancy. • Supports H.264 (AVC) and H.265 (HEVC) video encoding standards. • Supported protocols: GB28181, ONVIF. • Supports RTSP protocol. • Decoding capacity per board: <ul style="list-style-type: none"> - 8× 3840×2160@30Hz. - 18× 2560×1440@30Hz. - 32× 1920×1080@30Hz. - 64× 720×576@30Hz. • Supports DHCP. <p>2×1G FIBER</p> <ul style="list-style-type: none"> • Refer to 2×RJ45 GbE ports. <p>1×USB3.0 (Reserved)</p> <p>Status LEDs (ETH)</p> <ul style="list-style-type: none"> • Off: Power supply failure. • Solid green: Normal power supply. | | |

| | |
|--|---|
| | <ul style="list-style-type: none"> • Blinking orange: Normal data communication. <p>Status LEDs (FIBER)</p> <ul style="list-style-type: none"> • Off: Power supply failure. • Solid green: Normal power supply. • Blinking green: Normal fiber connection. <p>Specifications</p> <ul style="list-style-type: none"> • Weight: 500 g (17.6 oz) • Dimensions: 193 mm (7.6")×243.2 mm (9.6")×19.82 mm (0.8") • Power consumption: 12W |
|--|---|

| | | | |
|-----------------------|--|--------------------------|--|
| Name: U_Control Board | | Model: U_IN_CENTRAL_CTRL | |
| Details |  <p>2×COM</p> <ul style="list-style-type: none"> • RS-232/RS-422/RS-485 serial ports; compatible with devices using RS-232/RS-422/RS-485 control protocols. • COM connector pinout  <ul style="list-style-type: none"> • Pin assignment and wiring | | |

| PIN | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|-------|------|-----|-----|------|-----|------|-----|-----|------|
| RS232 | --- | RXD | TXD | --- | GND | --- | --- | --- | --- |
| RS422 | RXD- | --- | --- | TXD+ | GND | RXD+ | --- | --- | TXD- |
| RS485 | --- | --- | --- | A | --- | --- | --- | --- | B |

1×ETH

- Supports network-based control of external devices.
- Supported protocols: TCP/IP, UDP
- Bandwidth: 10/100 Mbps, auto-negotiation

3×I/O

- Supports user-defined command programming to control various terminal device functions.
- Pins 1, 2, and 3 are configurable as input or output; pin G serves as the common ground.

3×RELAY OUT


- Supports power on/off control of external devices via relay switching.
- Voltage: DC 30V; Current: 0–3A.
- Each relay output (up to 3) has 2 pins used to connect or disconnect external devices.


3×IR OUT

- Supports IR-based control of external devices.
- Supports importing learned IR commands.
- Pins 1, 2, and 3 function as IR outputs; pin G serves as the common ground.

Specifications

- Weight: 415 g (14.6 oz)
- Dimensions: 193 mm (7.6")×243.2 mm (9.6")×19.82 mm (0.8")
- Power consumption: 10W

| Name: U_4×AUDIO Input Board | | Model: U_IN_4AUDIO |
|-----------------------------|--|--------------------|
| Details | <div style="text-align: center;">  </div> <p>8×Phoenix connectors</p> <ul style="list-style-type: none"> • 8 audio channels, each supporting both input and output. • Supports single channel and dual channel modes. • Single channel mode <ul style="list-style-type: none"> - 4 audio inputs and 4 audio outputs. • Dual channel mode <ul style="list-style-type: none"> - 2 audio inputs and 2 audio outputs. • Audio sampling rate: 48kHz. • Sources of output audio <ul style="list-style-type: none"> - Embedded audio from the input video. - Audio input from the audio board. • Supports switching between single channel and dual channel modes. • Supports output volume adjustment and one-click mute. • Supports audio output delay. <p>Specifications</p> <ul style="list-style-type: none"> • Weight: 480 g (16.9 oz) • Dimensions: 193 mm (7.6")×243.2 mm (9.6")×19.82 mm (0.8") • Power consumption: 10W | |

| Name: U_2×VGA+2×CVBS Input Board | | Model: U_IN_2VGA_2CVBS |
|----------------------------------|---|------------------------|
| Details |  <p>2×VGA</p> <ul style="list-style-type: none"> • Each port supports a maximum video input of 1920×1200@60Hz. <p>2×CVBS</p> <ul style="list-style-type: none"> • Supports both PAL and NTSC standards. <p>Status LEDs</p> <ul style="list-style-type: none"> • Off: Power supply failure. • Solid green: Normal power supply. • Blinking green: Normal video input. <p>Specifications</p> <ul style="list-style-type: none"> • Weight: 420 g (14.8 oz) • Dimensions: 193 mm (7.6")×243.2 mm (9.6")×19.82 mm (0.8") • Power consumption: 10W | |
| Tech Specs | <ul style="list-style-type: none"> • For video specifications, refer to Section 5.1.6. | |

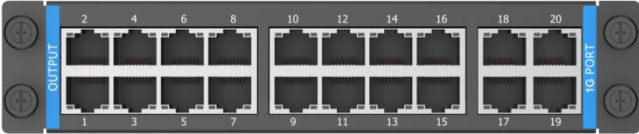
4.2 Output Boards


8 types of output boards available for flexible configuration:


| Name | Model |
|-------------------------------|-------------------|
| U_20×1G Ethernet output board | U_OUT_20×1G_RJ45 |
| U_8×5G Ethernet output board | U_OUT_8×5G_RJ45 |
| U_4×10G fiber output board | U_OUT_4×10G_FIBER |
| U_2×HDMI 2.0 output board | U_OUT_2HDMI20 |
| U_1×HDMI 2.0 output board | U_OUT_1HDMI20 |
| U_4×HDMI 1.4 output board | U_OUT_4HDMI14 |
| U_6×HDMI 1.3 output board | U_OUT_6HDMI13 |
| U_4×DVI output board | U_OUT_4DVI |

Number of output boards per device:

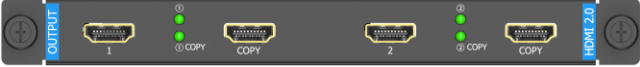
| Board Specifications | | |
|-------------------------------|--------------------|--------------------|
| Max. output boards | | 20 |
| U_20×1G Ethernet output board | Max. output ports | 400 |
| | Max. load capacity | 262 million pixels |
| U_8×5G Ethernet output board | Max. output ports | 160 |
| | Max. load capacity | 472 million pixels |
| U_4×10G fiber output board | Max. output ports | 80 |
| | Max. load capacity | 520 million pixels |
| U_2×HDMI 2.0 output board | Max. output ports | 40 |
| U_1×HDMI 2.0 output board | Max. output ports | 20 |
| U_4×HDMI 1.4 output board | Max. output ports | 80 |
| U_6×HDMI 1.3 output board | Max. output ports | 120 |
| U_4×DVI output board | Max. output ports | 80 |

| Name: U_20×1G Ethernet Output Board | | Model: U_OUT_20×1G_RJ45 | |
|-------------------------------------|--|-------------------------|-------------------|
| Details |  <p>As an LED sending card, this board loads up to 13 million pixels, with a maximum width and height of 16384 pixels. Each board occupies two slots.</p> <p>20×RJ45 1G Ethernet ports</p> <ul style="list-style-type: none"> • 8/10-bit output. • Frame rates: 23.98Hz ~ 240Hz. • Supports loop redundancy between Ethernet ports. <p>Status LEDs</p> <ul style="list-style-type: none"> • Off: Power supply failure. • Solid green: Normal power supply. • Blinking orange: Normal data communication. <p>Specifications</p> <ul style="list-style-type: none"> • Weight: 596 g (21.0 oz) • Dimensions: 193 mm (7.6")×243.2 mm (9.6")×19.82 mm (0.8") • Power consumption: 40W | | |
| | Load Capacity per Board | Frame Rate (Hz) | Color Depth (bit) |
| | 60 | 8 | 13 million |
| | | 10 | 9.75 million |
| | 120 | 8 | 6.5 million |
| | | 10 | 4.87 million |
| | 240 | 8 | 3.25 million |
| | | 10 | 2.43 million |


| Name: U_8×5G Ethernet Output Board | | Model: U_OUT_8×5G_RJ45 | |
|------------------------------------|--|------------------------|-------------------|
| Details |  <p>As an LED sending card, this board loads up to 23.6 million pixels, with a maximum width and height of 16384 pixels. Use with a shielded Cat6A cable.</p> <p>8×RJ45 5G Ethernet ports</p> <ul style="list-style-type: none"> • 8/10-bit output. • Frame rates: 23.98Hz ~ 240Hz. • Supports loop redundancy between Ethernet ports. <p>Status LEDs</p> <ul style="list-style-type: none"> • Off: Power supply failure. • Solid green: Normal power supply; normal cable connection. • Blinking orange: Normal data communication. <p>Specifications</p> <ul style="list-style-type: none"> • Weight: 510 g (18.0 oz) • Dimensions: 193 mm (7.6")×243.2 mm (9.6")×19.82 mm (0.8") • Power consumption: 28W | | |
| | Load Capacity per Board | Frame Rate (Hz) | Color Depth (bit) |
| | 60 | 8 | 23.6 million |
| | | 10 | 17.7 million |
| | 120 | 8 | 11.8 million |
| | | 10 | 8.85 million |
| | 240 | 8 | 5.9 million |
| | | 10 | 4.42 million |

| Name: U_4×10G fiber Output Board | Model: U_OUT_4×10G_FIBER |
|----------------------------------|--|
| Details |  <p>As an LED sending card, this board loads up to 26 million pixels, with a maximum width and height of 16384 pixels. Use with a dedicated fiber optic transceiver.</p> <p>4×10G fiber</p> <ul style="list-style-type: none"> • Supports 3 operating modes: independent, redundancy, and copy. <ul style="list-style-type: none"> • Independent mode <ul style="list-style-type: none"> - All 4 fiber ports are used for output. Each port can be converted to 10×1G Ethernet ports via fiber optic transceivers. • Redundancy mode <ul style="list-style-type: none"> - Ports 1 and 2 are used as the primary ports, while Ports 3 and 4 are used as the backup ports. Port 3 backs up the output of Port 1, and Port 4 backs up the output of Port 2. - To enable redundancy mode, the primary and backup ports must be connected in a loop. • Copy mode <ul style="list-style-type: none"> - Ports 1 and 2 are used for the primary ports, while Ports 3 and 4 are used as the copy ports. Port 3 copies the output of Port 1, and Port 4 copies the output of Port 2. • Supports output to be displayed at any position within the control area for each Ethernet port. • 8/10-bit output. • Frame rates: 23.98Hz ~ 240Hz. • Supports both single-mode and multi-mode SFP+ optical modules, with single-mode transmitting up to 20 km and multi-mode up to 300 m. • Comes with 4 single-mode, dual-core optical modules, with a transmission distance of 2 km and a wavelength of 1310 nm. Optical modules of other specifications are optional. |


| | | | |
|-------------------------|---|-------------------|---------------|
| | <p>Status LEDs</p> <ul style="list-style-type: none"> • Off: Power supply failure. • Solid green: Normal power supply. • Blinking green: Normal fiber connection. <p>Specifications</p> <ul style="list-style-type: none"> • Weight: 490 g (17.3 oz) • Dimensions: 193 mm (7.6")×243.2 mm (9.6")×19.82 mm (0.8") • Power consumption: 23W | | |
| Load Capacity per Board | Frame Rate (Hz) | Color Depth (bit) | Pixels |
| | | | 60 |
| | 120 | 10 | 19.64 million |
| | | 8 | 13.08 million |
| | 240 | 10 | 9.8 million |
| | | 8 | 6.52 million |
| | | 10 | 4.88 million |

| | | |
|---------------------------------|---|----------------------|
| Name: U_2×HDMI 2.0 Output Board | | Model: U_OUT_2HDMI20 |
| Details |  <p>2×HDMI2.0</p> <ul style="list-style-type: none"> • Ports 1 and 2 are used for video output. Port 1 (COPY) copies the output of Port 1, and Port 2 (COPY) copies the output of Port 2. • Each port supports a maximum video output of 4096×2160@60Hz/ 8192×1080@60Hz. • Width/height limit: 8192 pixels. • 8/10-bit output. • Frame rates: 23.98Hz ~ 240Hz. | |


| | |
|-------------------|--|
| | <ul style="list-style-type: none"> • Color formats: RGB, YCbCr444, YCbCr422. • Supports HDCP2.2 and HDCP1.4. • Supports embedded audio output. <p>Status LEDs</p> <ul style="list-style-type: none"> • Off: Power supply failure. • Solid green: Normal power supply. • Blinking green: Normal video source output. <p>Specifications</p> <ul style="list-style-type: none"> • Weight: 486 g (17.1 oz) • Dimensions: 193 mm (7.6")×243.2 mm (9.6")×19.82 mm (0.8") • Power consumption: 25W |
| Tech Specs | <ul style="list-style-type: none"> • For video specifications, refer to Section 5.2.1. |


| | | | |
|--|--|-----------------------------|--|
| Name: U_1×HDMI 2.0 Output Board | | Model: U_OUT_1HDMI20 | |
| Details |  | | |
| | <p>1×HDMI2.0</p> <ul style="list-style-type: none"> • Port 1 is used for video output. Port 1 (COPY) copies the output of Port 1. • Each port supports a maximum video output of 4096×2160@60Hz/8192×1080@60Hz. • Width/height limit: 8192 pixels. • 8/10-bit output. • Frame rates: 23.98Hz ~ 240Hz. • Color formats: RGB, YCbCr444, YCbCr422. • Supports HDCP2.2 and HDCP1.4. • Supports embedded audio output. <p>Status LEDs</p> | | |

| | |
|-------------------|--|
| | <ul style="list-style-type: none"> • Off: Power supply failure. • Solid green: Normal power supply. • Blinking green: Normal video source output. <p>Specifications</p> <ul style="list-style-type: none"> • Weight: 466 g (16.4 oz) • Dimensions: 193 mm (7.6")×243.2 mm (9.6")×19.82 mm (0.8") • Power consumption: 25W |
| Tech Specs | <ul style="list-style-type: none"> • For video specifications, refer to Section 5.2.1. |

| | | |
|-----------------------------------|---|--------------------------|
| Name: U_4×DVI Output Board | | Model: U_OUT_4DVI |
| Details |  <p>4×DVI</p> <ul style="list-style-type: none"> • Each port supports a maximum video output of 2048×1080@60Hz. • Width/height limit: 4096 pixels. • 8-bit output. • Frame rates: 23.98Hz ~ 60Hz. • Color formats: RGB, YCbCr444, YCbCr422. • Supports HDCP1.4. • Supports embedded audio output. <p>Status LEDs</p> <ul style="list-style-type: none"> • Off: Power supply failure. • Solid green: Normal power supply. • Blinking green: Normal video source output. <p>Specifications</p> <ul style="list-style-type: none"> • Weight: 506 g (17.8 oz) • Dimensions: 193 mm (7.6")×243.2 mm (9.6")×19.82 mm (0.8") | |


| | |
|------------|---|
| | <ul style="list-style-type: none">• Power consumption: 25W |
| Tech Specs | <ul style="list-style-type: none">• For video specifications, refer to Section 5.2.4. |

| Name: U_4×HDMI 1.4 Output Board | | Model: U_OUT_4HDMI14 |
|---------------------------------|---|----------------------|
| Details |  <p>4×HDMI1.4</p> <ul style="list-style-type: none"> • Each port supports a maximum video output of 4096×2160@30Hz/4096×1080@60Hz. • Width/height limit: 4096 pixels. • 8-bit output. • Frame rates: 23.98Hz ~ 120Hz. • Color formats: RGB, YCbCr444, YCbCr422. • Supports HDCP1.4. • Supports embedded audio output. <p>Status LEDs</p> <ul style="list-style-type: none"> • Off: Power supply failure. • Solid green: Normal power supply. • Blinking green: Normal video source output. <p>Specifications</p> <ul style="list-style-type: none"> • Weight: 476 g (16.8 oz) • Dimensions: 193 mm (7.6")×243.2 mm (9.6")×19.82 mm (0.8") • Power consumption: 25W | |
| Tech Specs | <ul style="list-style-type: none"> • For video specifications, refer to Section 5.2.2. | |


| Name: U_6×HDMI 1.3 Output Board | | Model: U_OUT_6HDMI13 |
|---------------------------------|---|----------------------|
| Details |  <p>6×HDMI 1.3</p> <ul style="list-style-type: none"> • Each port supports a maximum video output of 2048×1080@60Hz. | |

| | |
|--------------------------|--|
| | <ul style="list-style-type: none"> • Width/height limit: 4096 pixels. • 8-bit output. • Frame rates: 23.98Hz ~ 120Hz. • Color formats: RGB, YCbCr444, YCbCr422. • Supports HDCP1.4. • Supports embedded audio output. <p>Status LEDs</p> <ul style="list-style-type: none"> • Off: Power supply failure. • Solid green: Normal power supply. • Blinking green: Normal video source output. <p>Specifications</p> <ul style="list-style-type: none"> • Weight: 476 g (16.8 oz) • Dimensions: 193 mm (7.6")×243.2 mm (9.6")×19.82 mm (0.8") • Power consumption: 25W |
| <p>Tech Specs</p> | <ul style="list-style-type: none"> • For video specifications, refer to Section 5.2.3. |

4.3 Preview Board

| Name: U_Preview Board | | Model: U_OUT_2HDMI20_2RJ45 |
|-----------------------|---|----------------------------|
| Details |  <p>2×HDMI2.0</p> <ul style="list-style-type: none"> • Connects to monitors for input preview and output monitoring. • Supports 3840x2160@60Hz and 1920x1080@60Hz. • By default, Port 1 is for Preview, Port 2 is for Program. • Supports custom layouts for both Preview and Program, with multiple built-in templates available. <p>Specifications</p> <ul style="list-style-type: none"> • Weight: 500 g (17.6 oz) • Dimensions: 193 mm (7.6")×243.2 mm (9.6")×19.82 mm (0.8") • Power consumption: 25W | |

4.4 Main Board

| Name: U_Main Board | | Model: U_MAINBOARD |
|--------------------|---|--------------------|
| Details |  <p>1×GENLOCK_IN/LOOP</p> <ul style="list-style-type: none"> • 1×GENLOCK IN for reference input; 1×GENLOCK LOOP for reference loop-out. • Supports Black Burst, Bi-level, and Tri-level signals. <p>1×RJ45 (1G Ethernet port)</p> <ul style="list-style-type: none"> • A communication port for the host, used for connecting to a PC or tablet via a switch or router for device configuration and control. <p>2×RJ11</p> <ul style="list-style-type: none"> • RS-232 serial port with a default baud rate of 115200, 8N1. Used for connecting to central controllers or other devices. <p>2×USB2.0</p> <ul style="list-style-type: none"> • Supports firmware upgrades via a USB drive. • Supports data restoration/export via a USB drive. <p>1×3D</p> <ul style="list-style-type: none"> • Works with a 3D emitter and compatible 3D glasses to deliver 3D visual effects. <p>Specifications</p> <ul style="list-style-type: none"> • Weight: 479 g (16.9 oz) • Dimensions: 193 mm (7.6")×243.2 mm (9.6")×19.82 mm (0.8") • Power consumption: 13W | |

05 PORT SPECIFICATIONS

5.1 Input Ports

| 5.1.1 HDMI2.0 | | | |
|--------------------|------------------------------------|-------------------|---|
| Resolution | Color Format | Color Depth (bit) | Frame Rate (Hz) |
| DCI4K 4096×2160 | RGB/YCbCr444 | 10 | 23.98,24,25,29.97,30,50 |
| | | 8 | 23.98,24,25,29.97,30,50,59.94,60 |
| | YCbCr422/YCbCr420 | 8/10 | |
| UHD 3840×2160 | RGB/YCbCr444 | 10 | 23.98,24,25,29.97,30,50 |
| | | 8 | 23.98,24,25,29.97,30,50,59.94,60 |
| | YCbCr422/YCbCr420 | 8/10 | |
| QHD 2560×1440 | RGB/YCbCr444 | 10 | 23.98,24,25,29.97,30,50,59.94,60,100 |
| | | 8 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120,144 |
| | YCbCr422/YCbCr420 | 8/10 | |
| 2K 2048×1152 | RGB/YCbCr444/ YCbCr422/YCbCr420 | 8/10 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120,144 |
| WUXGA 1920×1200 | RGB/YCbCr444/ YCbCr422/YCbCr420 | 8/10 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120,144 |
| FHD 1920×1080 | RGB/YCbCr444/ YCbCr422/YCbCr420 | 8/10 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120,144 |
| UXGA 1600×1200 | RGB/YCbCr444/ YCbCr422/YCbCr420 | 8/10 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120,144 |
| SXGA 1280×1024 | RGB/YCbCr444/ YCbCr422/YCbCr420 | 8/10 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120,144,200,240 |
| HD 1280×720 | RGB/YCbCr444/ YCbCr422/YCbCr420 | 8/10 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120,144,200,240 |



Note: The specifications listed above apply to standard resolutions. For non-standard resolutions, ensure all parameters remain within the interface's bandwidth limitations.

| 5.1.2 DP1.2 | | | |
|--------------------|---------------------------|-------------------|---|
| Resolution | Color Format | Color Depth (bit) | Frame Rate (Hz) |
| DCI4K 4096×2160 | RGB/YCbCr444 | 10 | 23.98,24,25,29.97,30,50,59.94,60 |
| | | 8 | 23.98,24,25,29.97,30,50,59.94,60 |
| | YCbCr422 | 8/10 | |
| UHD 3840×2160 | RGB/YCbCr444 | 10 | 23.98,24,25,29.97,30,50,59.94,60 |
| | | 8 | 23.98,24,25,29.97,30,50,59.94,60 |
| | YCbCr422 | 8/10 | |
| QHD 2560×1440 | RGB/YCbCr444 | 10 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120,144 |
| | | 8 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120,144 |
| | YCbCr422 | 8/10 | |
| 2K 2048×1152 | RGB/YCbCr444/ YCbCr422 | 8/10 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120,144 |
| WUXGA 1920×1200 | RGB/YCbCr444/ YCbCr422 | 8/10 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120,144 |
| FHD 1920×1080 | RGB/YCbCr444/ YCbCr422 | 8/10 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120,144 |
| UXGA 1600×1200 | RGB/YCbCr444/ YCbCr422 | 8/10 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120,144 |
| SXGA 1280×1024 | RGB/YCbCr444/ YCbCr422 | 8/10 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120,144,200,240 |
| HD 1280×720 | RGB/YCbCr444/ YCbCr422 | 8/10 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120,144,200,240 |



Note: The specifications listed above apply to standard resolutions. For non-standard resolutions, ensure all parameters remain within the interface's bandwidth limitations.

| 5.1.3 12G-SDI | | | |
|-----------------------------------|--------------|-------------------|----------------------------------|
| Resolution | Color Format | Color Depth (bit) | Frame Rate (Hz) |
| 12G-SDI 4096×2160 3840×2160 | YCbCr422 | 8/10 | 50,59,94,60 |
| 6G-SDI 4096×2160 3840×2160 | YCbCr422 | 8/10 | 23.98,24,25,29.97,30 |
| 3G-SDI 2048×1080 1920×1080 | YCbCr422 | 8/10 | 50,59,94,60 |
| HD-SDI 1920×1080i | YCbCr422 | 8/10 | 50,59,94,60 |
| HD-SDI 2048×1080 1920×1080 | YCbCr422 | 8/10 | 23.98,24,25,29.97,30 |
| HD-SDI 1280×720 | YCbCr422 | 8/10 | 23.98,24,25,29.97,30,50,59,94,60 |
| ED-SDI 720×576 720×480 | YCbCr422 | 8/10 | 50,59,94 |
| SD-SDI 720×576i 720×480i | YCbCr422 | 8/10 | 50,59,94 |



Note: The specifications listed above apply to standard resolutions. For non-standard resolutions, ensure all parameters remain within the interface's bandwidth limitations.

| 5.1.4 3G-SDI | | | |
|----------------------------------|--------------|-------------------|----------------------------------|
| Resolution | Color Format | Color Depth (bit) | Frame Rate (Hz) |
| 3G-SDI 2048×1080 1920×1080 | YCbCr422 | 8/10 | 50,59.94,60 |
| HD-SDI 1920×1080i | YCbCr422 | 8/10 | 50,59.94,60 |
| HD-SDI 2048×1080 1920×1080 | YCbCr422 | 8/10 | 23.98,24,25,29.97,30 |
| HD-SDI 1280×720 | YCbCr422 | 8/10 | 23.98,24,25,29.97,30,50,59.94,60 |
| ED-SDI 720×576 720×480 | YCbCr422 | 8/10 | 50,59.94 |
| SD-SDI 720×576i 720×480i | YCbCr422 | 8/10 | 50,59.94 |



Note: The specifications listed above apply to standard resolutions. For non-standard resolutions, ensure all parameters remain within the interface's bandwidth limitations.

| 5.1.5 HDMI1.3 | | | |
|--------------------|---------------------------|-------------------|---|
| Resolution | Color Format | Color Depth (bit) | Frame Rate (Hz) |
| 2K 2048×1152 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60 |
| WUXGA 1920×1200 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60 |
| FHD 1920×1080 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60 |
| UXGA 1600×1200 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60 |
| SXGA 1280×1024 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60,100 |
| HD 1280×720 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120 |
| XGA 1024×768 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120,144 |
| SVGA 800×600 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120,144,200,240 |



Note: The specifications listed above apply to standard resolutions. For non-standard resolutions, ensure all parameters remain within the interface's bandwidth limitations.

| 5.1.6 VGA | | | |
|--------------------|--------------|-------------------|----------------------------------|
| Resolution | Color Format | Color Depth (bit) | Frame Rate (Hz) |
| WUXGA 1920×1200 | RGB | 8 | 23.98,24,25,29.97,30,50,59.94,60 |
| FHD 1920×1080 | RGB | 8 | 23.98,24,25,29.97,30,50,59.94,60 |
| UXGA 1600×1200 | RGB | 8 | 23.98,24,25,29.97,30,50,59.94,60 |
| SXGA 1280×1024 | RGB | 8 | 23.98,24,25,29.97,30,50,59.94,60 |
| HD 1280×720 | RGB | 8 | 23.98,24,25,29.97,30,50,59.94,60 |
| XGA 1024×768 | RGB | 8 | 23.98,24,25,29.97,30,50,59.94,60 |
| SVGA 800×600 | RGB | 8 | 23.98,24,25,29.97,30,50,59.94,60 |



Note: The specifications listed above apply to standard resolutions. For non-standard resolutions, ensure all parameters remain within the interface's bandwidth limitations.

5.2 Output Ports

| 5.2.1 HDMI2.0 | | | |
|--------------------|---------------------------|-------------------|---|
| Resolution | Color Format | Color Depth (bit) | Frame Rate (Hz) |
| DCI4K 4096×2160 | RGB/YCbCr444 | 10 | 23.98,24,25,29.97,30 |
| | | 8 | 23.98,24,25,29.97,30,50,59.94,60 |
| | YCbCr422 | 8/10 | |
| UHD 3840×2160 | RGB/YCbCr444 | 10 | 23.98,24,25,29.97,30 |
| | | 8 | 23.98,24,25,29.97,30,50,59.94,60 |
| | YCbCr422 | 8/10 | |
| QHD 2560×1440 | RGB/YCbCr444 | 10 | 23.98,24,25,29.97,30,50,59.94,60,100 |
| | | 8 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120,144 |
| | YCbCr422 | 8/10 | |
| 2K 2048×1152 | RGB/YCbCr444/ YCbCr422 | 8/10 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120,144 |
| WUXGA 1920×1200 | RGB/YCbCr444/ YCbCr422 | 8/10 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120,144 |
| FHD 1920×1080 | RGB/YCbCr444/ YCbCr422 | 8/10 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120,144 |
| UXGA 1600×1200 | RGB/YCbCr444/ YCbCr422 | 8/10 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120,144 |
| SXGA 1280×1024 | RGB/YCbCr444/ YCbCr422 | 8/10 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120,144,200,240 |
| HD 1280×720 | RGB/YCbCr444/ YCbCr422 | 8/10 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120,144,200,240 |



Note: The specifications listed above apply to standard resolutions. For non-standard resolutions, ensure all parameters remain within the interface's bandwidth limitations.

| 5.2.2 HDMI1.4 | | | |
|--------------------|---------------------------|-------------------|---|
| Resolution | Color Format | Color Depth (bit) | Frame Rate (Hz) |
| DCI4K 4096×2160 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30 |
| UHD 3840×2160 | RGB/YCbCr444 | 8 | 23.98,24,25,29.97,30 |
| QHD 2560×1440 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60 |
| 2K 2048×1152 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120 |
| WUXGA 1920×1200 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120 |
| FHD 1920×1080 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120 |
| UXGA 1600×1200 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120 |
| SXGA 1280×1024 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120 |
| HD 1280×720 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120 |
| XGA 1024×768 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120 |
| SVGA 800×600 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120 |



Note: The specifications listed above apply to standard resolutions. For non-standard resolutions, ensure all parameters remain within the interface's bandwidth limitations.

| 5.2.3 HDMI1.3 | | | |
|--------------------|---------------------------|-------------------|---|
| Resolution | Color Format | Color Depth (bit) | Frame Rate (Hz) |
| 2K 2048×1152 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60 |
| WUXGA 1920×1200 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60 |
| FHD 1920×1080 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60 |
| UXGA 1600×1200 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60 |
| SXGA 1280×1024 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60,100 |
| HD 1280×720 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120 |
| XGA 1024×768 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120 |
| SVGA 800×600 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120 |



Note: The specifications listed above apply to standard resolutions. For non-standard resolutions, ensure all parameters remain within the interface's bandwidth limitations.

| 5.2.4 DVI | | | |
|--------------------|---------------------------|-------------------|---|
| Resolution | Color Format | Color Depth (bit) | Frame Rate (Hz) |
| 2K 2048×1152 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60 |
| WUXGA 1920×1200 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60 |
| FHD 1920×1080 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60 |
| UXGA 1600×1200 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60 |
| SXGA 1280×1024 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60,100 |
| HD 1280×720 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120 |
| XGA 1024×768 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120 |
| SVGA 800×600 | RGB/YCbCr444/ YCbCr422 | 8 | 23.98,24,25,29.97,30,50,59.94,60,100, 119.88,120 |



Note: The specifications listed above apply to standard resolutions. For non-standard resolutions, ensure all parameters remain within the interface's bandwidth limitations.

06 CABINET COUNT LOADED

| Ethernet Port | Frame Rate | Cabinet Pixels | Cabinet Count | Layout |
|--------------------------|------------|----------------|--|--|
| 1G Ethernet port (8-bit) | 60Hz | 768*432 | 1 | 1×1 |
| | | 640*360 | 2 | 2×1, 1×2 |
| | | 480*270 | 5 | 5×1, 2×2, 1×5 |
| | | 384*216 | 7 | 7×1, 3×2, 2×3, 1×7 |
| | | 320*180 | 11 | 10×1, 5×2, 3×3, 2×5, 1×10 |
| | | 256*512 | 5 | 5×1, 2×2, 1×5 |
| | | 256*256 | 10 | 10×1, 5×2, 3×3, 2×4, 1×9 |
| | | 168*168 | 23 | 23×1, 11×2, 7×3, 5×4, 4×5, 3×7, 2×11, 1×21 |
| | 128*128 | 40 | 40×1, 20×2, 13×3, 10×4, 7×5, 6×6, 5×7, 4×9, 3×13, 2×19, 1×35 | |
| | 120Hz | 640*360 | 1 | 1×1 |
| | | 480*270 | 2 | 2×1, 1×2 |
| | | 384*216 | 3 | 3×1, 1×3 |
| | | 320*180 | 5 | 5×1, 2×2, 1×5 |
| | | 256*512 | 2 | 2×1, 1×2 |
| | | 256*256 | 5 | 2×1, 1×2 |
| | | 168*168 | 11 | 11×1, 5×2, 3×3, 2×5, 1×10 |
| | 128*128 | 20 | 20×1, 10×2, 6×3, 5×4, 3×5, 3×6, 2×9, 1×17 | |
| | 240Hz | 480*270 | 1 | 1×1 |
| | | 384*216 | 1 | 1×1 |
| | | 320*180 | 2 | 2×1, 1×2 |
| | | 256*512 | 1 | 1×1 |
| | | 256*256 | 2 | 2×1, 1×2 |
| | | 168*168 | 5 | 5×1, 2×2, 1×5 |
| | | 128*128 | 10 | 10×1, 5×2, 3×3, 2×4, 1×9 |

| Ethernet Port | Frame Rate | Cabinet Pixels | Cabinet Count | Layout |
|---------------------------|------------|----------------|--------------------------------|---|
| 1G Ethernet port (10-bit) | 60Hz | 768*432 | 1 | 1×1 |
| | | 640*360 | 2 | 2×1, 1×2 |
| | | 480*270 | 3 | 5×1, 2×2, 1×5 |
| | | 384*216 | 5 | 7×1, 3×2, 2×3, 1×7 |
| | | 320*180 | 8 | 10×1, 5×2, 3×3, 2×5, 1×10 |
| | | 256*512 | 3 | 3×1, 1×3 |
| | | 256*256 | 7 | 7×1, 3×2, 2×3, 1×7 |
| | | 168*168 | 17 | 17×1, 8×2, 5×3, 4×4, 3×5, 2×8, 1×16 |
| | | 128*128 | 30 | 30×1, 15×2, 10×3, 7×4, 6×5, 4×6, 4×7, 3×9, 2×14, 1×27 |
| | 120Hz | 640*360 | 1 | 1×1 |
| | | 480*270 | 1 | 2×1, 1×2 |
| | | 384*216 | 2 | 3×1, 1×3 |
| | | 320*180 | 4 | 5×1, 2×2, 1×5 |
| | | 256*512 | 1 | 1×1 |
| | | 256*256 | 3 | 3×1, 1×3 |
| | | 168*168 | 8 | 8×1, 4×2, 2×4, 1×8 |
| | 128*128 | 15 | 15×1, 7×2, 5×3, 3×4, 2×7, 1×13 | |
| | 240Hz | 480*270 | 1 | 1×1 |
| | | 384*216 | 1 | 1×1 |
| | | 320*180 | 2 | 2×1, 1×2 |
| | | 256*256 | 1 | 1×1 |
| 168*168 | | 4 | 4×1, 2×2, 1×4 | |
| 128*128 | | 7 | 7×1, 3×2, 2×3, 1×6 | |

| Ethernet Port | Frame Rate | Cabinet Pixels | Cabinet Count | Layout |
|--------------------------|------------|----------------|---------------|---|
| 5G Ethernet port (8-bit) | 60Hz | 1280*720 | 3 | 3×1, 1×3 |
| | | 768*432 | 8 | 8×1, 4×2, 2×4, 1×8 |
| | | 640*360 | 12 | 12×1, 6×2, 4×3, 3×4, 2×6, 1×12 |
| | | 480*270 | 22 | 22×1, 11×2, 7×3, 5×4, 3×7, 4×5, 2×11, 1×22 |
| | | 384*216 | 35 | 35×1, 17×2, 11×3, 8×4, 7×5, 5×7, 4×8, 3×11, 2×17, 1×35 |
| | | 320*180 | 51 | 51×1, 25×2, 17×3, 12×4, 10×5, 8×6, 7×7, 6×8, 5×10, 4×12, 3×17, 2×25 |
| | | 256*512 | 22 | 22×1, 11×2, 7×3, 5×4, 4×5, 3×7, 2×10, 1×21 |
| | | 256*256 | 45 | 45×1, 22×2, 15×3, 11×4, 9×5, 7×6, 6×7, 5×9, 4×11, 3×14, 2×21, 1×43 |
| | | 168*168 | 104 | 104×1, 52×2, 20×5, 10×10, 9×11, 5×20, 2×51, 1×96... |
| | | 128*128 | 180 | 180×1, 90×2, 36×5, 18×10, 13×13, 10×18, 5×35, 2×86, 1×160... |
| | 120Hz | 1280*720 | 1 | 1×1 |
| | | 768*432 | 4 | 4×1, 2×2, 1×4 |
| | | 640*360 | 6 | 6×1, 2×3, 3×2, 1×6 |
| | | 480*270 | 11 | 11×1, 5×2, 3×3, 2×5, 1×11 |
| | | 384*216 | 17 | 17×1, 8×2, 5×3, 4×4, 3×5, 2×8, 1×17 |
| | | 320*180 | 25 | 25×1, 12×2, 8×3, 6×4, 5×5, 4×6, 3×8, 2×12, 1×25 |
| | | 256*512 | 11 | 11×1, 5×2, 3×3, 2×5, 1×10 |
| | | 256*256 | 22 | 22×1, 11×2, 7×3, 5×4, 4×5, 3×7, 2×10, 1×21 |
| | | 168*168 | 52 | 52×1, 26×2, 17×3, 13×4, 10×5, 8×6, 7×7, 6×8, 5×10, 4×12, 3×16, 2×25, 1×48 |

| | | | | |
|--|-------|---------|----|--|
| | | 128*128 | 90 | 90×1, 45×2, 18×5, 10×9, 9×10, 5×17, 2×43, 1×80... |
| | 240Hz | 768*432 | 2 | 2×1, 1×2 |
| | | 640*360 | 3 | 3×1, 1×3 |
| | | 480*270 | 5 | 5×1, 2×2, 1×5 |
| | | 384*216 | 8 | 8×1, 4×2, 2×4, 1×8 |
| | | 320*180 | 12 | 12×1, 6×2, 4×3, 3×4, 2×6, 1×12 |
| | | 256*512 | 5 | 5×1, 2×2, 1×5 |
| | | 256*256 | 11 | 11×1, 5×2, 3×3, 2×5, 1×10 |
| | | 168*168 | 26 | 26×1, 13×2, 8×3, 6×4, 5×5, 4×6, 3×8, 2×12, 1×24 |
| | | 128*128 | 45 | 45×1, 22×2, 15×3, 11×4, 9×5, 7×6, 6×7, 5×8, 4×10, 3×14, 2×21, 1×40 |

| Ethernet Port | Frame Rate | Cabinet Pixels | Cabinet Count | Layout |
|---------------------------|------------|----------------|---------------|---|
| 5G Ethernet port (10-bit) | 60Hz | 1280*720 | 2 | 2×1, 1×2 |
| | | 768*432 | 6 | 6×1, 2×3, 3×2, 1×6 |
| | | 640*360 | 9 | 9×1, 4×2, 3×3, 2×4, 1×9 |
| | | 480*270 | 17 | 17×1, 8×2, 5×3, 4×4, 3×5, 2×8, 1×17 |
| | | 384*216 | 26 | 26×1, 13×2, 8×3, 6×4, 5×5, 4×6, 3×8, 2×13, 1×26 |
| | | 320*180 | 38 | 38×1, 19×2, 12×3, 9×4, 7×5, 6×6, 5×7, 4×9, 3×12, 2×19, 1×38 |
| | | 256*512 | 17 | 17×1, 8×2, 5×3, 4×4, 3×5, 2×8, 1×16 |
| | | 256*256 | 34 | 34×1, 17×2, 11×3, 8×4, 6×5, 5×6, 4×8, 3×11, 2×16, 1×33 |
| | | 168*168 | 79 | 79×1, 38×2, 15×5, 9×8, 8×9, 5×15, 2×39, 1×74... |
| | | 128*128 | 136 | 136×1, 68×2, 27×5, 12×11, 11×12, 5×27, 2×66, 1×125... |

| | | | | |
|--|-------|----------|----|--|
| | 120Hz | 1280*720 | 1 | 1×1 |
| | | 768*432 | 3 | 3×1, 1×3 |
| | | 640*360 | 4 | 4×1, 2×2, 1×4 |
| | | 480*270 | 8 | 8×1, 4×2, 2×4, 1×8 |
| | | 384*216 | 13 | 13×1, 6×2, 4×3, 3×4, 2×6, 1×13 |
| | | 320*180 | 19 | 19×1, 9×2, 6×3, 4×4, 3×6, 2×9, 1×19 |
| | | 256*512 | 8 | 8×1, 4×2, 2×4, 1×8 |
| | | 256*256 | 17 | 17×1, 8×2, 5×3, 4×4, 3×5, 2×8, 1×16 |
| | | 168*168 | 39 | 39×1 |
| | | 128*128 | 68 | 68×1, 34×2, 13×5, 11×6, 8×8, 6×11, 5×13, 2×33, 1×62... |
| | 240Hz | 768*432 | 1 | 1×1 |
| | | 640*360 | 2 | 2×1, 1×2 |
| | | 480*270 | 4 | 4×1, 2×2, 1×4 |
| | | 384*216 | 6 | 6×1, 2×3, 3×2, 1×6 |
| | | 320*180 | 9 | 9×1, 4×2, 3×3, 2×4, 1×9 |
| | | 256*512 | 4 | 4×1, 2×2, 1×4 |
| | | 256*256 | 8 | 8×1, 4×2, 2×4, 1×8 |
| | | 168*168 | 19 | 19×1, 9×2, 6×3, 4×4, 3×6, 2×9, 1×18 |
| | | 128*128 | 34 | 34×1, 17×2, 11×3, 8×4, 6×5, 5×6, 4×8, 3×10, 2×16, 1×31 |



Note: The specifications above apply to standard cabinets. For details on other cabinets, consult technical support.

07 DEVICE SPECIFICATIONS

| Product Information | |
|---|---|
| Series | Universe |
| Model | U15 Max |
| Input Specifications | |
| Max. input boards | 30 |
| Max. inputs | 60× 4K@60Hz / 120× 2K@60Hz |
| Output Specifications | |
| Max. output boards | 20 |
| Max. outputs | 40× 4K@60Hz / 120× 2K@60Hz |
| Max. load for LED screens– 1G Ethernet port | 262 million pixels |
| Max. load for LED screens– 5G Ethernet port | 472 million pixels |
| Max. load for LED screens– 10G fiber port | 520 million pixels |
| Max. LCD displays–HDMI 2.0 port | 40 |
| Max. LCD displays–HDMI 1.4 port | 80 |
| Max. LCD displays–HDMI 1.3 port | 120 |
| Max. LCD displays–DVI port | 80 |
| Number of Layers | |
| Max. layers | 320 |
| Physical Dimensions (WxHxD) | |
| Device | 482.6mm (19.0") x 666.0mm (26.0") x 535.2mm (21.1") (excluding rubber feet) |
| Packaging | 678.0mm (26.7") x 842.0mm (33.1") x 643.0mm |

| | | |
|---|---|-----|
| | (25.3") | |
| Weight | | |
| Net | 40.9kg (90.17lbs) | |
| Gross | 59.6kg (131.40lbs) | |
| Electrical Parameters | | |
| Power supply | Power input: AC 100–240V, 50/60Hz Power consumption: 1300W Power supplies: • 2× included (both required for operation) • 2× optional (for redundancy) | |
| Max. power consumption | 1000W | |
| Operating Environment | | |
| Temperature | 10°C~45°C (50°F~113°F) | |
| Humidity | 0%RH-85%RH, non-condensing | |
| Storage Environment | | |
| Temperature | -10°C~60°C (14°F~140°F) | |
| Humidity | 0%RH-95%RH, non-condensing | |
| Placement Requirement | | |
| This device can only be placed horizontally. Do not invert the device or place it vertically. | | |
| Others | | |
| Noise level (typical at 25°C/77°F) | < 45 dB(A) | |
| Accessories | U15 Max Video Splicer | 1PC |
| | Quick Start Guide | 1PC |
| | Warranty Card | 1PC |
| | Certificate | 1PC |
| | Gigabit Ethernet Cable | 1PC |

| | | |
|--|-----------------|---|
| | Power Cord | 2PCS to 4PCS (Additional cords provided with optional power supplies) |
| | Brush | 1PC |
| | Grounding Cable | 1PC |
| | HDMI 2.0 Cable | 1PC (Additional cables provided with optional boards) |
| | DP 1.2 Cable | 1PC (Additional cables provided with optional boards) |
| | DVI Cable | 1PC (Additional cables provided with optional boards) |

08 INSTALLATION

8.1 Chassis Handling

- Always have two or more people to move the chassis.
- Use the front handles and side lifting handles when carrying the chassis.
- Lift and place the chassis slightly to prevent damage.



Warning:

Always disconnect power before installation, maintenance, or handling.

8.2 Rack Mounting

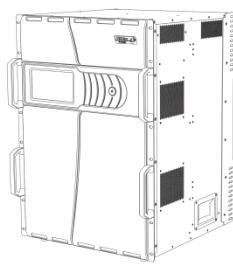
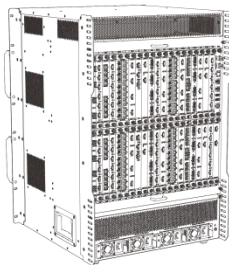
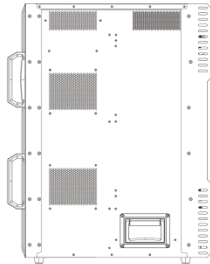
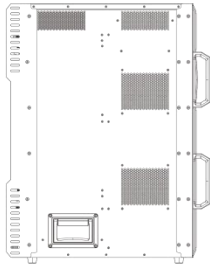
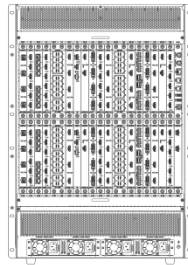
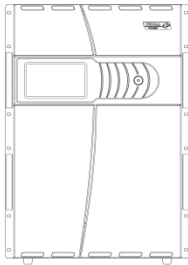
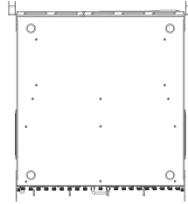
- Install the chassis at the bottom of the rack.
- Ensure the rack has a support shelf to hold the chassis. (Optional: Remove the four chassis feet for a stable fit if necessary.)
- Secure all rack ears and rails with screws.



Warning:

Always disconnect power before installation, maintenance, or handling.

09 SIX PRINCIPAL VIEWS



www.colorlightinside.com
Specification

5

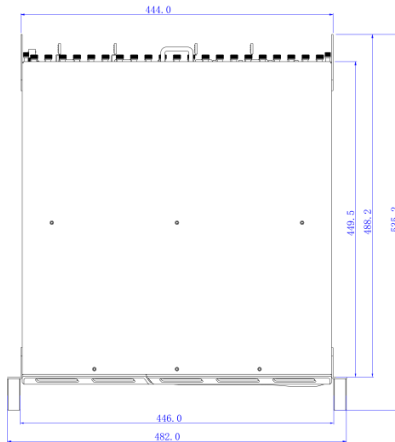
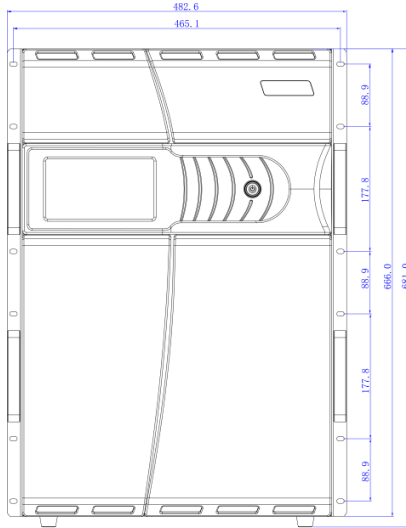
Universe Series

Need LED display solutions? Contact Chipshow:
manager@chipshow.com | www.chipshow.com

10 REFERENCE DIMENSIONS

Unit: mm

Tolerance: $\pm 0.2\text{mm}$



11 STATEMENTS

11.1 Certifications

CCC, CE, UKCA, FCC, IC, CB, cTUVus, KC, RCM, EAC, RoHS, REACH



Note: If the product does not have the relevant certifications required by the countries or regions where it is to be sold, please contact Colorlight to confirm or address the problem as soon as possible. Otherwise, the customer shall be responsible for the legal risks or Colorlight has the right to claim compensation.

11.2 Legal Statement

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Colorlight

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