

CineLife+ RGB PLF Specifications

Learn about the product specifications. Due to continuing research, specifications are subject to change without notice.

Product documentation

For installation, setup, and user information, see the product documentation available on the Christie Digital Systems USA Inc. website. Read all instructions before using or servicing this product.

CP4440-RGB

To access the documentation from the Christie website:

- Go to <http://bit.ly/2NwVsRy> or <https://www.christiedigital.com/en-us/cinema/cinema-products/digital-cinema-projectors/christie-cp4440-rgb>
- Scan the QR code using a QR code reader app on a smartphone or tablet.



CP4450-RGB

To access the documentation from the Christie website:

- Go to <http://bit.ly/2UYiI0V> or <https://www.christiedigital.com/en-us/cinema/cinema-products/digital-cinema-projectors/christie-cp4450-rgb>
- Scan the QR code using a QR code reader app on a smartphone or tablet.



Related documentation

Additional information on the projector is available in the following documents.

- *CineLife+ RGB PLF Installation and Setup Guide (P/N: 020-103072-XX)*
- *CineLife+ RGB PLF User Guide (P/N: 020-103073-XX)*
- *CineLife+ RGB PLF Product Safety Guide (P/N: 020-103071-XX)*
- *CineLife+ RGB PLF Service Guide (P/N: 020-103076-XX)*
- *CineLife+ 1.1.0 Serial Commands Guide (P/N: 020-103075-XX)*

Display specifications

Learn the display specifications of the CineLife+ RGB PLF projectors.

Panel resolution and refresh rate

Pixel format (H x V square pixels)	4096 x 2160
Processing path	2K: 23.97 to 120 fps 4K: 23.97 to 120 fps

Achievable brightness (measured at screen center)

Ambient Temperature/Relative Humidity	Nominal Brightness
25°C at up to 80% relative humidity	CP4440-RGB: Up to 45,000 lumens using High Brightness lens Up to 35,000 lumens using Ultra High Contrast lens
	CP4450-RGB: Up to 55,000 lumens using High Brightness lens Up to 42,000 lumens using Ultra High Contrast lens

Achievable contrast ratio

650:1 ANSI, using High Brightness lens
850:1 ANSI, using Ultra High Contrast lens
2000:1 using High Brightness lens
6000:1 using Ultra High Contrast lens

Color and grayscale

Displayable colors	35.2 trillion
Grayscale resolution	12 bits per RGB component

Nominal white point

x = 0.314 ± 0.006
y = 0.351 ± 0.006

Gamma

Theater (nominal)	2.6 ± 5%
-------------------	----------

Control signal compatibility

Learn the control signal compatibility for the projector.

Ethernet port

Interface	10Base-T / (IEEE 802.3) / 100BASE-TX (IEEE 802.3u) / 1000BASE-TX (IEEE 802.3ab)
Connector	Female RJ-45
Bit rate	1000 Mbps

USB 2.0

Interface	USB 2.0
Connector	USB Type "A"
Bit rate	480 Mbps
Available power for devices	2A @ 5V (TBC)

USB 3.0 touch panel input

Interface	USB 3.0
Connector	USB Type "C"
Bit rate	5.0 Gbps
Available power for devices	2A @ 5V (TBC)

GPIO port

Interface	Opto-LED inputs, relay outputs
Number of I/O lines	16 - 4 inputs, 4 outputs, 1 health signal output
Connector	Terminal blocks
Wire size accepted	28-20 AWG

GPI diode forward current	5mA nominal, 50mA maximum
GPI diode forward voltage	1.1V nominal, 1.4V maximum (@ 5mA)
GPI relay continuous current	1A
GPO relay output rating	60V
Output supply voltage	5VDS @ 200 mA

3D port

Interface	Proprietary 3D connector
Connector	15-pin subminiature D, female
Bit rate	115,200 bps
Flow control	Software
Data format	1 start bit, 8 data, 1 stop bit, no parity
Communication protocol	RS232 and GPIO

SDI ports

Interface	SMPTE ST 259M (270 Mbps), SMPTE ST 292-1 (1.5 Gbps), SMPTE ST 424 (3.0 Gbps), SMPTE ST 2081-1 (6.0 Gbps), SMPTE ST 2082-1 (12.0 Gbps)
Connector	75 ohms micro-BNC
Bit rate	multi-rate to 12 Gbps

RS 485 port (chiller control and status)

Interface	Proprietary chiller connector
Connector	9-pin subminiature D, female
Bit rate	9600 bps
Flow control	Software
Data format	RS 485, 28-bit start, 8-bit Address, 8-bit function, n x 8-bit data 16-bit CRC, 28-bit End
Communications protocol	Modbus RTU

Supported image formats for alternate inputs

Learn the supported image formats for the SDI inputs on the projector.

SDI-1

The following single-link, 2D SDI image formats are supported for SDI Input 1.

	Format	Cables	Frame/Field Rate (Hz)									Sampling	Bit Depth	Notes
			24	25	30	—	—	—	—	—	—			
HD	1920x1080	1	24	25	30	—	—	—	—	—	—	4:2:2	10 bpc	HD1080p Component at 1.5 Gbps (ST 292-1)
	1920x1080	1	—	—	—	48	50	60	—	—	—	4:2:2	10 bpc	HD1080p Component at 3.0 Gbps (ST 425-1) Level A
	1920x1080	1	24	25	30	—	—	—	—	—	—	4:4:4:(4)	12 bpc	HD 1080p YCbCr / RGB Component at 3.0 Gbps (ST 425-1) Level A
	1920x1080	1	24	25	30	—	—	—	—	—	—	4:2:2:(4)	12 bpc	HD 1080p YCbCr Component at 3.0G bps (ST 425-1) Level A
	1920x1080	1	—	—	—	48	50	60	—	—	—	4:4:4:(4)	10 bpc	HD 1080p YCbCr / RGB Component at 6.0 Gbps (ST 2081-10) Structure II
	1920x1080	1	—	—	—	48	50	60	—	—	—	4:4:4	12 bpc	HD 1080p YCbCr / RGB Component at 6.0 Gbps (ST 2081-10) Mode 2 Structure III
	1920x1080	1	—	—	—	48	50	60	—	—	—	4:2:2:(4)	12 bpc	HD 1080p YCbCr / RGB Component at 6.0 Gbps (ST 2081-10) Mode 2 Structure IV
4K	3840x2160	1	—	—	—	48	50	60	—	—	—	4:2:2	10 bpc	2160p YCbCr Component at 6.0 Gbps (ST 2081-10) Mode 1 Structure 1
	3840x2160	1	24	25	30	—	—	—	—	—	—	4:4:4:(4)	10 bpc	2160p YCbCr / RGB Component at 12.0 Gbps (ST 2082-10) Mode 1 Structure 2
	3840x2160	1	24	25	30	—	—	—	—	—	—	4:4:4	12 bpc	2160p YCbCr / RGB Component at 12.0 Gbps (ST 2082-10) Mode 1 Structure 3
	3840x2160	1	24	25	30	—	—	—	—	—	—	4:2:2:(4)	12 bpc	2160p YCbCr Component at 12.0 Gbps (ST 2082-10) Mode 1 Structure 4



- Frame rates also include fractional 1/1.001 rates.
- 1920x1080 line progressive formats include both 1920x1080 and 2048x1080.
- 3840x2160 line progressive formats include both 3840x2160 and 4096x2160.
- For all 3Gbps SDI Inputs, only Level A is supported.
- For all 4K image formats, only 2SI sub-division is supported.

SDI-Dual-Input (1,2) and (3,4)

The following dual-link, 2D SDI input formats are supported.

Format	Cables	Frame/Field Rate (Hz)									Sampling	Bit Depth	Notes	
HD	1920x1080	2	—	—	—	48	50	60	—	—	—	4:4:4:(4)	10 bpc	Y'C _B C _R /RGB Component at dual-link 3 Gbps (ST 425-3) Structure II
	1920x1080	2	—	—	—	48	50	60	—	—	—	4:4:4	12 bpc	Y'C _B C _R /RGB Component at dual-link 3 Gbps (ST 425-3) Structure III
	1920x1080	2	—	—	—	48	50	60	—	—	—	4:2:2	12 bpc	Y'C _B C _R Component at dual-link 3 Gbps (ST 425-3) Structure II
4K	3840x2160	2	24	25	30	—	—	—	—	—	—	4:2:2	10 bpc	Y'C _B C _R Component at dual-link 3 Gbps (ST 425-3)
	3840x2160	2	—	—	—	48	50	60	—	—	—	4:2:2	10 bpc	Y'C _B C _R Component at dual-link 6 Gbps (ST 2081-11) Mode 1
	3840x2160	2	24	25	30	—	—	—	—	—	—	4:4:4:(4)	10 bpc	Y'C _B C _R Component at dual-link 6 Gbps (ST 2081-11) Mode 1
	3840x2160	2	24	25	30	—	—	—	—	—	—	4:4:4	12 bpc	Y'C _B C _R /RGB Component at dual-link 6 Gbps (ST 2081-11) Mode 1
	3840x2160	2	24	25	30	—	—	—	—	—	—	4:2:2	12 bpc	Y'C _B C _R Component at dual-link 6 Gbps (ST 2081-11) Mode 1
	3840x2160	2	24	25	30	—	—	—	—	—	—	4:2:2:4	—	Y'C _B C _R Component at dual-link 6 Gbps (ST 2081-11) Mode 1



- Frame rates also include fractional 1/1.001 rates.
- 1920x1080 is equivalent to 1920x1080 and 2048x1080.
- 3840x2160 is equivalent to 3840x2160 and 4096x2160.
- Input 1 = SDI 1 and SDI 2.
- Input 2 = SDI 3 and SDI 4.

SDI-Quad

The following quad-link SDI 2D image formats are supported.

Format	Cables	Frame/Field Rate (Hz)										Sampling	Bit Depth	Notes
		24	25	30	—	—	—	—	—	—	—			
4K	3840x2160	4	24	25	30	—	—	—	—	—	—	4:4:4:(4)	10 bpc	Y'C _B C _R /RGB Component at quad-link 3 Gbps (ST 425-5) Structure 2 Level A
	3840x2160	4	24	25	30	—	—	—	—	—	4:4:4	12 bpc	Y'C _B C _R /RGB Component at quad-link 3 Gbps (ST 425-5) Structure 3 Level A	
	3840x2160	4	24	25	30	—	—	—	—	—	4:2:2:4	12 bpc	Y'C _B C _R / Component at quad-link 3 Gbps (ST 425-5) Structure 4 Level A	
	3840x2160	4	24	25	30	—	—	—	—	—	4:2:2	12 bpc	Y'C _B C _R / Component at quad-link 3 Gbps (ST 425-5) Structure 1 Level A	
	3840x2160	4	—	—	—	48	50	60	—	—	—	4:2:2	10 bpc	Y'C _B C _R Component at quad-link 3 Gbps (ST 425-5) Structure I Level A
	3840x2160	4	—	—	—	48	50	60	—	—	—	4:4:4:(4)	10 bpc	Y'C _B C _R /RGB Component at quad-link 6 Gbps (ST 2081-12) Mode 2 Structure II



- Frame rates also include fractional 1/1.001 rates.
- 1920x1080 is equivalent to 1920x1080 and 2048x1080.
- 3840x2160 is equivalent to 3840x2160 and 4096x2160.

Power specifications

Learn the power requirements for the projector.

Item	Main Input A Main Input B	UPS Input
Voltage range	200 - 240 VAC	200 - 240 VAC

Item	Main Input A Main Input B	UPS Input
	single phase	single phase
Maximum current	16 A	10 A
Line frequency	50-60 Hz	50-60 Hz

Physical specifications

Learn the dimensions and weight of the CineLife+ RGB PLF projectors.

Item	Description
Size (L x W x H) (without the lens and with feet retracted)	1555 x 712 x 588 mm (61.2 x 28 x 23.1 inches)
Weight (installed, without the lens)	175 kg (386 lbs)
Shipping weight	211 kg (465 lbs)

Orientation and alignment

Learn about the orientation and alignment specifications of the CineLife+ RGB PLF projectors.

Orientation

The projectors are designed to operate in a non-inverted, landscape orientation, with all four feet on a level surface.

Alignment

The projectors are designed to operate within the following alignment angles:

Alignment	Permitted Angle
Front-to-back tilt	+3° (upwards) to -15° (downwards) The maximum tilt of -15° (downwards) can be achieved using the PLF Cinema Pedestal.
Side-to-side tilt	+3° to -3°

Touch panel specifications

Learn the specifications of the touch panel.

Type of Display	Color LCD, backlit
Display Size	256.54 mm (10.1 inches) diagonal
Display Resolution (H x V pixels)	1280 x 800

Maximum Dimensions (W x H x D)	260 x 178.4 x 32.3 mm (10.2 x 7.0 x 1.3 inches)
Communication Interface with Projector	USB-C
Power Requirement	10W maximum (DC)
Interface Connector	USB-C

Light source specifications

Learn about the specifications of the direct-coupled laser light source.

Dual, self-contained, fully sealed, RealLaser™ optical sub-systems (LOS)
Discrete Red, Green, and Blue laser diodes

Approved third-party components

The following third-party components are approved for use with CineLife+ RGB PLF.

Chiller components

Model	Part Number/Description
S&A Teyu Chiller CW-6200AN	163-124108-XX 50 Hz
S&A Teyu Chiller NA CW-6200	163-136101-XX 60 Hz

Integrated media blocks (IMBs)

High Speed Interface
GDC SR-6400C 4K 120 fps
GCD SR-5400C 4K 60 fps

Series 2 Interface
GDC SR-1000 (requires license for native 4K playback)
GDC SX-4000 (requires license for native 4K playback)
Dolby IMS3000



Series 2 IMBs require a CineLife+ faceplate to seat properly with the CineLife+ electronics. When ordering the IMB, ensure you indicate the correct projector model to obtain the correct faceplate from the IMB manufacturer.

Accessories

Learn about accessories that are available for CineLife+ RGB PLF projectors.

Projection lenses

Description	Part Number
0.90:1 HB fixed	38-809071-XX
1.13-1.66:1 DLPCine HB zoom	108-342100-XX
1.31-1.85:1 DLPCine HB zoom	108-335102-XX
1.45-2.17:1 DLPCine HB zoom	108-336103-XX
1.63-2.71:1 DLPCine HB zoom	108-337104-XX
1.95-3.26:1 DLPCine HB zoom	108-338105-XX
2.71-3.89:1 DLPCine HB zoom	108-278101-XX
1.13-1.66:1 DLPCine UHC zoom	163-103105-XX
1.31-1.85:1 DLPCine UHC zoom	163-104106-XX
1.45-2.17:1 DLPCine UHC zoom	163-105107-XX
1.63-2.71:1 DLPCine UHC zoom	163-106108-XX
1.95-3.26:1 DLPCine UHC zoom	163-107109-XX
2.71-3.89:1 DLPCine UHC zoom	163-108100-XX

Filters and coolant

Description	Part Number
Air Intake Filter	003-006819-XX
Light Engine Air Filter	003-006464-XX
Coolant Propylene Glycol 702 (700ml)	003-103148-XX
Coolant Propylene Glycol 702 (10L)	003-006744-XX

UPS power cord (optional)

Description	Part Number
North America 250V/20A	108-386108-XX
Japan 250V/20A	108-370101-XX
China 250V/16A	108-372103-XX
EU/UK 250V/16A	108-430108-XX
EU 250V/16A	108-564106-XX
Korea 250V/16A	108-378109-XX

Description	Part Number
India 250V/16A	108-565107-XX
South Africa 250V/16A	108-566108-XX
Australia 250V/16A	108-435103-XX

Chiller accessories

Description	Part Number
Chiller Setup Kit Plumbing	163-149105-XX
Chiller Setup Kit Air Ducts	163-150107-XX

Miscellaneous

Description	Part Number
PLF Cinema Pedestal (optional)	163-126100-XX

Environment

Learn about the environment requirements for the CineLife+ RGB PLF projectors while operating and not operating.

Operating environment

Item	Description
Temperature	10°C to 35°C 50°F to 95°F
Humidity (non-condensing)	10% to 80%
Altitude	0 to 3000 meters 0 to 9843 feet
Optimal maximum ambient temperature	25°C 77°F
Site cleanliness	ISO Class 9 or cleaner

Non-operating environment

Item	Description
Temperature	-25°C to 70°C (-13°F to 158°F)
Humidity (non-condensing)	0% to 95%

Regulatory

This product conforms to the latest regulations and standards related to product safety, environmental, and electromagnetic compatibility (EMC) requirements.

Safety

- ANSI/UL 60950-1 – Information Technology Equipment – Safety – Part 1: General Requirements
- CAN/CSA C22.2 No. 60950-1-07 – Information Technology Equipment – Safety – Part 1: General Requirements
- IEC/EN 60825-1 – Safety of Laser Products – Part 1: Equipment Classification and Requirements
- IEC 60950-1 IEC/EN 60950-1 – Information Technology Equipment – Safety – Part 1: General Requirements
- IEC/EN 62471-5 – Photobiological Safety of Lamps and Lamp Systems – Part 5: Image projectors

Electro-magnetic compatibility

Emissions

- CAN ICES-003 (A)/NMB-003 (A) – Information Technology Equipment (Including Digital Apparatus) – Limits and Methods of Measurement
- CISPR 32/EN 55032, Class A – Electromagnetic Compatibility of Multimedia Equipment – Emission Requirements
- FCC CFR47, Part 15, Subpart B, Class A – Unintentional Radiators
- IEC 61000-3-2/EN61000-3-2: Limits for harmonic current emissions for equipment with input current ≤ 16 A
- IEC 61000-3-3/EN61000-3-3: Limitations of Voltage Changes, Voltage Fluctuations, and Flicker input current ≤ 16 A
- IEC 61000-3-11/EN61000-3-11: Limitations of Voltage Changes, Voltage Fluctuations, and Flicker for equipment with rated current ≤ 75 A
- IEC 61000-3-12/EN61000-3-12: Limits for harmonic current emissions for equipment for systems with input current > 16 A and ≤ 75 A per phase

Immunity

- CISPR 24/EN55024 EMC Requirements – Information Technology Equipment

Environmental

- China Ministry of Information Industry (along with 7 other Government Agencies) Order No.32 (01/2016) on the control of pollution caused by electronic information products, hazardous substances concentration limits (GB/T 26572 - 2011), and the applicable product marking requirement (SJ/T 11364 - 2014).

- EU Directive (2011/65/EU) on the restriction of the uses of certain hazardous substances (RoHS) in electrical and electronic equipment and the applicable official amendment(s).
- EU Directive (2012/19/EU) on waste and electrical and electronic equipment (WEEE) and the applicable official amendment(s).
- Regulation (EC) No. 1907/2006 on the registration, evaluation, authorization and restriction of chemicals (REACH) and the applicable official amendment(s).