Technical Reference
020-103075-09

CineLife+
Serial Commands

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Learn the hazard and information symbols used in the product documentation.

Danger messages indicate a hazardous situation which, if not avoided, results in death or serious injury.

Warning messages indicate a hazardous situation which, if not avoided, could result in death or serious injury.

Caution messages indicate a hazardous situation which, if not avoided, could result in minor or moderate injury.

Notice messages indicate a hazardous situation which, if not avoided, may result in equipment or property damage.

Information messages provide additional information, emphasize or provide a useful tip.

Content

Communicating with the projector

Understand the information and procedures for communicating with the projector from a remote location.

Models

This guide applies to the following models.

- All Christie Series 4 laser projectors: CP44xx-RGB, CP24xx-RGB
- All Christie Series 4 xenon projectors:
  - CP2415-Xe
  - CP2420-Xe
  - CP4420-Xe

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.

1. Access the documentation from the Christie website:
   - Go to this URL: *https://bit.ly/3vxrm4Y* or *https://www.christiedigital.com/products/cinema/projection/cinelife-plus-series/*.
   - Scan the QR code using a QR code reader app on a smartphone or tablet.

2. On the product page, select the model and switch to the **Downloads** tab.

Connecting to the projector Ethernet port

Communicate with the projector through the Ethernet port.

1. Change the IP address of your computer to place your computer on the same subnet as the projector.

Make sure the computer and projector IP addresses do not conflict with any device on the network.

The default IP address of the projector from the factory is 192.168.206.110 with a subnet of 255.255.255.0.

2. Connect to the projector using port 5000 from your computer.

   Use a Telnet client, such as Net-Terminal, Kore Librarian, or PuTTY, to connect to the projector.

3. Start sending serial commands.

   You may need to issue the *UID command* (on page 35) to give you the permission level required to run the commands you want to send.

Understanding the message format

Commands sent to and from CineLife+ projectors are formatted as simple text messages consisting of a three letter function code, an optional four letter subcode, and optional data.

Source	Format	Function	Example
From controller	(Code Data)	SET (set the gamma file of the active channel to index 1 from a previous listing)	`(GAM 1)`
	(Code+Subcode Data)	SET (set the gamma file for the specified channel to the specified file)	`(GAM+CHAN "Media Block Flat" "Gamma 2.4")`
	(Code ?)	REQUEST (what is current power state?)	`(PWR?) or (PWR ?)`
	(Code+Subcode ?)	REQUEST (what is the current time?)	`(TMD+TIME?)`
From projector	(Code Data)	REPLY (active gamma file)	`(GAM! "Gamma 2.6")`
	(Code+Subcode Data)	REPLY (current time is 12:18:49)	`(TMD+TIME! "12:18:49")`

Generally, Set and Reply messages have the same data in the same format, and Requests do not contain any data. You can include an optional space between the function code and the number when entering the commands.

For example, `(PWR1)` can be entered as `(PWR 1)`.

Available message types

Message type	Description
Set	A command to set a projector parameter at a specific level, such as changing the brightness.
Request	A request for information, such as what is the current brightness setting.
Reply	Returns the data in response to a request or as confirmation of a command.

Basic message structure

Understand the component fields that comprise a standard ASCII message.

Components	Description
Start and end of message	Every message begins with the left parenthesis character and ends with the right parenthesis character. If the start character is received before an end character of the previous message, the partial (previous) message is discarded.
Prefix characters (optional)	To acknowledge that CineLife+ has responded, and/or maximize message integrity, insert one or two special characters before the three-character function code: • $ (Simple Acknowledgment)—Causes a dollar sign ($) character to be sent from CineLife+ when it has finished processing the message. • # (Full Acknowledgment)—Causes an echo of the message as a reply to be sent from CineLife+ when it has finished processing the message. • & (Checksum)—Allows a checksum to be put as the last parameter in the message for verification at CineLife+.
Function code	The CineLife+ function you want to work with is represented by a three-character ASCII code (A-Z, upper or lower case). This function code appears immediately after the leading parenthesis that starts the message. In messages sent to CineLife+ that do not have a subcode, a space between the function code and the first parameter (or special character) is optional.
+Subcode	The CineLife+ function you want to work with may have one or more subcodes that allow you to select a specific source, image, channel or subfunction. The subcode is represented by a four-character ASCII code (A-Z, upper or lower case, and 0-9). This subcode appears immediately after the function code, with a plus sign (+) character to separate the function code and subcode. If no subcode exists, the plus sign (+) is also omitted. In messages sent to CineLife+ that have a subcode, a space between the subcode and the first parameter (or special character) is optional.
Request/reply symbols	If the controller is requesting information from CineLife+, a question mark (?) appears directly after the function code. If CineLife+ is replying, an exclamation mark (!) appears directly after the function code. For set messages to CineLife+, neither of these characters appear—data directly follows the function code and subcode.
Data	The value for a given CineLife+ state, such as on or off, appears in ASCII-decimal format directly after the request/reply symbol. You can add an optional space after the symbol—such as before the data—in a set message, but data in replies follow the exclamation mark (!) symbol without a space (PWR!000). Other details to remember about data: • All values returned by CineLife+ (reply messages) have a fixed length, regardless of the actual value. For a specific parameter, the length is always the same (for example, contrast is always returned as three characters, CineLife+ number is always returned as five characters). The minimum parameter size is three characters. Values less than the predefined size are padded with leading zeros as needed. Parameters which have negative signs are zero padded after the negative sign, and have one less digit to make space for the sign.

Components	Description
	• Data in set messages to CineLife+ do not require padding with zeros. • Within each message, multiple parameters of data must be separated by one space character. • Text parameters such as channel names are enclosed in double quotes following the data, as in "Name".
Text parameters	Most data is a numerical value; however, some messages also require text. For example, the time command requires time to be provided in text enclosed in double quotation mark, as in "19:45:23". Use all characters as required except for special characters—these require a two-character combination.

Special characters for text

To use special characters in the API commands, you must use a two-character combination.

Special character	Two-character combination	Description
"	\"	Double quotation mark
\	\\	Backslash
(	\(	Left parenthesis
)	\)	Right parenthesis
Line break	\n	New line—If the text can be displayed on more than one line, this sets the line break.
Send arbitrary code	\h##	Sends one arbitrary code defined by the two hexadecimal digits ##.

Confirming command execution

If you want confirmation from the projector (or group of projectors) that a set message has been processed, request an acknowledgment by inserting a dollar sign ($) after the start code left parenthesis.

When the projector executes the command action (for example, as channel switch), the projector returns a dollar sign ($). This quickly confirms success with set messages and is particularly useful with long-distance communication links or situations where the projectors or images are not visible from the controller.

Set the active ILS file and return an acknowledgment example:

```
($ILF "ILS Flat")
$
```

Acknowledgments can also be a type of flow control.

> Requesting an acknowledgment serves no purpose when included in a request message as the acknowledgment is redundant to the reply from the projector. However, if requested, the dollar sign ($) acknowledgment from the projector follows the reply.

Example:

```
($CHA?)
(CHA! "Media Block Flat")
$
```

Error messages

If a command cannot be performed, a descriptive error identifying the problem appears.

For example, the following message indicates a syntax error:

```
(TMD+DSTA)
```

```
(ERR!"Wrong number of parameters")
```

CineLife+™ serial commands

The serial commands can be used to modify product settings. This document provides a list of all available CineLife+™ serial commands.

Depending on the projector you are working with, some commands may not be available.

To display a list of all commands available on your projector, run the serial help command: `(HLP?)`. To use all the available commands, log in as service using the default password: `(UID "service" "<password>")`.

AUT–Automation

Executes a macro from a script.

Parameters

- **Access level:** Operator
- **Power level (minimum):** Power Down

Commands

Command	Description	Values
AUT+EXEC "<script>" "<macro>"	Executes the specified macro from the specified script.	script = Script to run the macro macro = Macro to execute

Examples

Execute the MyMacro1 macro from the MyScript script: `(AUT+EXEC "MyScript" "MyMacro1")`
Execute the MyMacro macro from the MyMacro script: `(AUT+EXEC "MyMacro")`

CHA–Channel

Selects the channel configuration.

Parameters

- **Access level:** Operator
- **Power level (minimum):** Power Down

Commands

Command	Description	Values
CHA?	Returns the active channel name. (Read-only)	—
CHA?L	Returns a list of available channels. (Read-only)	—
CHA "<value>"	Sets the channel configuration.	value = "Channel name" Send (CHA?L) to see a list of available channels and then use this command to set the channel configuration.

Examples

Return the active channel name:
(CHA?)
Result:
(CHA! "Media Block Flat")
Set the channel to Media Block Flat:
(CHA "Media Block Flat")

FCS–Focus Lens Position Adjustment

Adjusts the lens to a specific focus position with a specified direction.

In most cases the active lens file is the one specified by the current channel. If a user selects a different lens file in the user interface ILS File Setup panel, the selected lens file becomes active. That file may be different than the one specified by the current channel.

Parameters

- **Access level:** Operator
- **Power level (minimum):** Power Up

Commands

Command	Description	Values
FCS?	Returns the current motor position and direction. (Read-only)	—
FCS <position> <-1 | 1>	Moves the lens mount to a specified focus position with a specified direction.	position = Numeric value -1 = Negative approach 1 = Positive approach
FCS+MOVR <step>	Moves the motor a given number of steps relative to the current location.	step = Numeric value
FCS+STOP	Stops the motor.	—
FCS+STRT <-1 | 1>	Starts the motor moving in a specified direction.	-1 = Negative approach 1 = Positive approach

Examples

Return current motor position and direction: `(FCS?)`
Move lens to position 500 at focus motor with a positive approach: `(FCS 500 1)`
Move lens to position 500 at focus motor with a negative approach: `(FCS 500 -1)`
Move the motor 200 steps in a positive direction: `(FCS+MOVR 200)`
Move the motor 100 steps in a negative direction: `(FCS+MOVR -100)`
Stop the motor: `(FCS+STOP)`
Start the motor moving in a positive direction: `(FCS+STRT 1)`

GAM–Gamma Control

Gets or sets the gamma file, which describes the gamma response curve for the source signal.

Parameters

- **Access level:** Installer
- **Power level (minimum):** Power Down

Commands

Command	Description	Values
GAM?	Returns the active gamma file. (Read-only)	—
GAM?L	Returns a list of all available gamma files. (Read-only)	—
GAM "<file>"	Sets the gamma file for the active channel.	file = Subject to the range returned in GAM?L
GAM+CHAN? "<channel>"	Gets the gamma file for the specified channel. (Read-only)	channel = The name of a specific channel
GAM+CHAN "<channel>" "<file>"	Sets the gamma file for the specified channel.	channel = The name of a specific channel file = Subject to the range returned in GAM?L

Examples

Return the active gamma file:

(GAM?)

Result:

(GAM! "Gamma 2.6")

Return a list of all available gamma files:

(GAM?L)

Result:

(GAM!L001 001 000 "Gamma 2.4")

(GAM!L001 001 001 "Gamma 2.6")

...

Set the specified gamma file for the active channel:

(GAM "Gamma 2.4")

Return the gamma file used by the specified channel:

(GAM+CHAN? "Media Block Flat")

Result:

(GAM+CHAN! "Gamma 2.6")

Set the gamma file for the specified channel to the specified file:

(GAM+CHAN "Media Block Flat" "Gamma 2.4")

HLP–Serial Help

Queries a list of all available serial commands, with brief descriptions and current enabled states.

Parameters

- **Access level:** None
- **Power level (minimum):** Power Down

Commands

Command	Description	Values
HLP?	Requests entire command help listing. (Read-only)	—
HLP? "<command>"	Requests help list for a single command. (Read-only)	—

Examples

Retrieve entire command help listing: (HLP?)
Retrieve all parameters and descriptions for PWR command: (HLP? "PWR")

ILF–ILS File

Gets or sets the active or specified channel Intelligent Lens System™ (ILS) file.

Parameters

- **Access level:** Installer
- **Power level (minimum):** Power Down

Commands

Command	Description	Values
ILF?	Returns the ILS file in use by the system. (Read-only)	—
ILF?L	Returns a list of all available ILS files. (Read-only)	—
ILF "<file>"	Sets the active ILS file.	file = Subject to the range returned in ILF?L
ILF+CHAN? "<channel>"	Returns the ILS file used by the specified channel. (Read-only)	channel = Name of a valid channel

Command	Description	Values
ILF+CHAN "<channel>" "<file>"	Sets the ILS file for the specified channel.	channel = Name of a valid channel file = Name of a valid ILS file

Examples

Return the ILS file in use by the system:

(ILF?)

Result:

(ILF! "ILS Scope")

Return a list of all available ILS files:

(ILF?L)

Result:

(ILF!L001 001 000 "ILS Scope")

(ILF!L001 001 001 "ILS Flat")

...

Set the active ILS file:

(ILF "ILS Flat")

Return the ILS file used by the specified channel:

(ILF+CHAN? "Media Block Flat")

Result:

((ILF+CHAN! "ILS Flat")

Set the ILS Flat file as the ILS file for the specified channel:

(ILF+CHAN "Media Block Flat" "ILS Flat")

ILS–ILS Setup

Calibrates and resets the Intelligent Lens System™ (ILS).

Parameters

- **Access level:** Operator
- **Power level (minimum):** Power Up

Commands

Command	Description	Values
ILS+CALB 1	Performs a full calibration on the ILS.	1
ILS+CSTS?	Returns the status of the calibration. (Read-only) 0 = Completed. 1 = In progress.	—

Command	Description	Values
ILS+ENAB?	Indicates if the ILS is enabled (1) or disabled (0). (Read-only)	—
ILS+INST?	Indicates if the ILS is installed (1) or not (0). (Read-only)	—
ILS+RSET 1	Performs a reset on the lens motor.	1
ILS+RSTS?	Returns the status of the motor reset. (Read-only) 0 = Complete 1 = In progress	—

Examples

Perform a full calibration of all axes of the lens system: `(ILS+CALB 1)`
Perform a reset of all axes of the lens: `(ILS+RSET 1)`

Return the status of the calibration:
`(ILS+CSTS?)`
Result:
`(ILS+CSTS! 0)`

Return the status of the motor reset:
`(ILS+RSTS?)`
Result:
`(ILS+RSTS! 1)`

Return the status of the ILS installed: `(ILS+INST?)`
Return the status of the ILS enabled: `(ILS+ENAB?)`

INR–Interrogator

Initiates an interrogator.

Parameters

- **Access level:** Operator
- **Power level (minimum):** Power Down

Commands

Command	Description	Values
INR 1	Initiates an interrogator.	1 = Starts the interrogator process

Command	Description	Values
INR 1 <components>	Initiates an enhanced interrogator with specified optional components. Add the components to include multiple components in the interrogator.	1 = Starts the interrogator process Components: 0 = Basic Interrogator (Default) 1 = Includes warp files 2 = Includes LOS Data files 4 = Includes cinema sensor files 8 = Includes test patterns 16 = Includes hardware snapshots 255 = Includes all the components

Examples

Initiate an interrogator: (INR 1)
Initiate an interrogator to run a basic report excluding all the optional components: (INR 1) or (INR 1 0)
Initiate an interrogator to run an enhanced report including warp files (results in larger report file size): (INR 1 1)
Initiate an interrogator to run an enhanced report including warp files and cinema sensor files (results in a larger report file size): (INR 1 5)
Initiate an interrogator to run an enhanced report including all the components (results in larger report file size): (INR 1 255)

ITP–Internal Test Pattern

Controls the internal test pattern.

Parameters

- **Access level:** Manager
- **Power level (minimum):** Power Up

Commands

Command	Description	Values
ITP?	Returns the name of the active test pattern. (Read-only)	—

Command	Description	Values
ITP?L	Returns the list of all available internal test patterns. (Read-only)	—
ITP "<name>"	Sets the internal test pattern.	name = Name of the test pattern subject to the range returned in ITP?L
ITP+FREQ?	Returns the frequency of the test pattern. (Read-only)	—
ITP+FREQ <frequency>	Sets the frequency of the test pattern.	frequency = Frequency of the test pattern Valid frequencies: 3D sync disabled: 24, 30, 48, 60 3D sync enabled: 48, 60
ITP+FULL?	Returns if the test pattern is displayed full screen or not. (Read-only)	—
ITP+FULL <0 | 1>	Enables or disables using full screen size for the test pattern.	0 = Disables using the full screen size for the test pattern 1 = Enables using the full screen size for the test pattern
ITP+NOCR?	Returns if the uncorrected setting for the test pattern is enabled or disabled. (Read-only)	—
ITP+NOCR <0 | 1>	Enables or disables the test pattern uncorrected setting.	0 = Uses corrected colors on the test pattern 1 = Uses uncorrected colors on the test pattern
ITP+3DSY?	Returns if the 3D sync is enabled or disabled on the test pattern. (Read-only)	—
ITP+3DSY <0 | 1>	Enables or disables the test pattern 3D sync setting.	0 = Disables 3D sync 1 = Enables 3D sync

Examples

Return the name of the active test pattern:
`(ITP?)`
Result when test pattern is active:
`(ITP!"DC4K Framing Green")`
Result when test pattern is not active:
`(ITP!0)`
where the returned parameter indicates the test pattern name if active or 0 if no test pattern is active.

Return the list of internal test patterns:
`(ITP L?)`
Result:
`(ITP!L001 001 000 "DC4K 15L Point")`

```
(ITP!L001 001 001 "DC4K 17L Point")

...

(ITP!L001 001 067 "XYZ-4K-Red40")

(ITP!L111 "--END--")
```

Set the internal test pattern:

```
(ITP "RGB-12bit-MacBeth ColorChecker")
```

Turn off the internal test pattern:

```
(ITP "")
```

Return the frequency of the test pattern:

```
(ITP+FREQ?)
```

Result:

```
(ITP+FREQ!60)
```

where the returned parameter displays the frequency of the test pattern.

Set the frequency of the test pattern:

```
(ITP+FREQ 48)
```

Return if the test pattern is full screen or not:

```
(ITP+FULL?)
```

Result:

```
(ITP+FULL!1)
```

where the returned parameter displays 1 if the test pattern is displayed full screen or 0 if not.

Set the test pattern full screen setting:

```
(ITP+FULL 1)
```

Return whether the test pattern is uncorrected:

```
(ITP+NOCR?)
```

Result:

```
(ITP+NOCR!0)
```

where the returned parameter displays 1 if the uncorrected setting is selected or 0 if not.

Set the test pattern uncorrected setting:

```
(ITP+NOCR 0)
```

Return if the 3D sync option is active or not:

```
(ITP+3DSY?)
```

Result:

```
(ITP+3DSY!1)
```

where the returned parameter displays 1 if the 3D setting is selected or 0 if not.

Set the test pattern 3D sync setting:

```
(ITP+3DSY 1)
```

LHO–Lens Horizontal Position Adjustment

Adjusts the lens offset to a specific horizontal position with a specified direction.

In most cases the active lens is specified by the current channel. If a user selects a different lens file in the ILS File Setup panel of the user interface, the selected lens file becomes active. This file may be different from the one specified by the current channel.

Parameters

- **Access level:** Operator
- **Power level (minimum):** Power Up

Commands

Command	Description	Values
LHO?	Returns the current motor position along the horizontal axis and direction. (Read-only)	—
LHO <position> <-1 | 1>	Moves the lens mount to a specified horizontal position with a specified direction.	position = Numeric value -1 = Negative approach 1 = Positive approach
LHO+MOVR <step>	Moves the motor a given number of steps based on the current location.	step = Numeric value
LHO+STOP	Stops the motor.	—
LHO+STRT <-1 | 1>	Starts the motor moving in a specified direction.	-1 = Negative approach 1 = Positive approach

Examples

Return current motor position along the horizontal axis and direction: `(LHO?)`
Move lens to position 500 along the horizontal axis with a positive approach: `(LHO 500 1)`
Move lens to position 500 along the horizontal axis with a negative approach: `(LHO 500 -1)`
Move the motor 100 steps in a negative direction: `(LHO+MOVR -100)`
Move the motor 200 steps in a positive direction: `(LHO+MOVR 200)`
Stop the motor: `(LHO+STOP)`
Start the motor moving in a positive direction:

```
(LHO+STRT 1)
```

LPF–Light Source File

Gets or sets the Light Source file for the active or specified channel.

Parameters

- **Access level:** Installer
- **Power level (minimum):** Power Down

Commands

Command	Description	Values
LPF?	Returns the light source file in use. (Read-only)	—
LPF?L	Returns a list of all available light source files. (Read-only)	—
LPF "<filename>" <0 | 1>	Sets the light source file for the active channel.	filename = Subject to the range returned in LPF?L 0 = Sets 2D light source file channel setting 1 = Sets 3D light source file channel setting
LPF+CHAN? "<channel>" <0 | 1>	Returns the light source file used by a specified channel. (Read-only)	channel = The name of a specific channel 0 = Gets 2D light source file channel setting 1 = Gets 3D light source file channel setting
LPF+CHAN "<channel>" "<filename>" <0 | 1>	Sets the light source file for a specified channel.	channel = The name of a specific channel filename = Subject to the range returned in LPF?L 0 = Sets 2D light source file channel setting 1 = Sets 3D light source file channel setting

Examples

Return the light source file in use by the active channel:

```
(LPF?)
```

Result:

(LPF! "Default3D")
Return a list of all available light source files: (LPF?L) Result: (LPF!L001 001 000 "Default") (LPF!L001 001 001 "Default3D") ...
Set the 2D light source file for the active channel: (LPF "Default") or (LPF "Default" 0)
Set the 3D light source file for the active channel: (LPF "Default3D" 1)
Return the 2D light source file used by the specified channel: (LPF+CHAN? "Media Block Flat") or (LPF+CHAN? "Media Block Flat" 0) Result: (LPF+CHAN! "Default")
Return the 3D light source file used by the specified channel: (LPF+CHAN? "Media Block Flat" 1) Result: (LPF+CHAN! "Default3D")
Set the 2D light source file to the specified channel: (LPF+CHAN "Media Block Flat" "Default") or (LPF+CHAN "Media Block Flat" "Default" 0)
Set the 3D light source file to the specified channel: (LPF+CHAN "Media Block Flat" "Default3D" 1)

LPH–Lamp Hours

Returns the lamp hours of the currently installed lamp.

Only applies to: Lamp-based CineLife+ products

Parameters

- **Access level:** Operator
- **Power level (minimum):** Power Down

Commands

Command	Description	Values
LPH?	Returns the lamp hours of the currently installed lamp. (Read-only)	—

Examples

> Return the lamp hours of the currently installed lamp:
> `(LPH?)`
> Result:
> `(LPH!"265")`

LPM–Lamp Mode

Enables or disables LiteLOC™ and sets its sensor level for the lamp-based projectors.

Refer to *LSC+LLOC command* (on page 24) for the laser-based projectors.

Parameters

- **Access Level:** Operator
- **Power level (minimum):** Power Up

Commands

Command	Description	Values
LPM?	Returns the lamp mode for the active lamp file. (Read-only)	—
LPM <0 | 1> <value>	Enables or disables LiteLOC and sets the target sensor level for the active lamp file.	0 = Disables LiteLOC 1 = Enables LiteLOC value = Numeric target value

Examples

> Return the lamp mode for the active lamp file:
> `(LPM?)`
> Result:
> `(LPM! "0 080")`
> Where 0 indicates LiteLOC is disabled and the sensor level is set to 80.

> Enable LiteLOC and set its sensor level to 60:
> `(LPM 1 60)`

LSC–Light Source Control

Controls the projector light source.

Parameters

- **Access level:** Service
- **Power level (minimum):** Power Up

Commands

Command	Description	Values
LSC+LLOC?	Returns the LiteLOC™ status. (Read-only)	—
LSC+LLOC <0 | 1> <value>	Enables or disables LiteLOC and sets the target on lamp-based projectors.	0 = Disables LiteLOC 1 = Enables LiteLOC value = Numeric target value
LSC+RGBP?	Returns the current RGB drive levels. (Read-only)	—
LSC+RGBP "<redDrive>" "<greenDrive>" "<blueDrive>"	Sets the RGB drive levels.	redDrive = Red drive level greenDrive = Green drive level blueDrive = Blue drive level
LSC+TARS?	Gets the target and actual brightness and white point. (Read-only)	—
LSC+TARS "<whitex>" "<whitey>" "<brightness>"	Sets the brightness with a specified white point.	whitex = White point x coordinate whitey = White point y coordinate brightness = Brightness percentage
LSC+WHTP?	Gets the current brightness. (Read-only)	—
LSC+WHTP "<brightness>"	Sets the brightness.	brightness = Brightness percentage

Examples

Return the LiteLOC status:

`(LSC+LLOC?)`

Result when LiteLOC is active:

`(LSC+LLOC!"Active")`

Result when LiteLOC is disabled:

`(LSC+LLOC!"Disabled")`

where the returned parameter indicates the LiteLOC status.

Set the LiteLOC as Active:

`(LSC+LLOC 1)`

Set the LiteLOC as Disabled: `(LSC+LLOC 0)`

Returns the current RGB drive levels:
`(LSC+RGBP?)`
Result:
`(LSC+RGBP!"79.70" "69.67" "82.81")`
where the returned first parameter indicates the red drive level, the second parameter indicates the green drive level, and the third parameter indicates the blue drive level.

Set the RGB drive levels: `(LSC+RGBP "90.00" "85.00" "80.00")`

Get the target and actual brightness and white point:
`(LSC+TARS?)`
Result:
`(LSC+TARS!"0.3140" "0.3510" "70.00" "0.3130" "0.3520" "69.92")`
where the returned parameters indicate the following:
  • First parameter = Target white point x coordinate
  • Second parameter = Target white point y coordinate
  • Third parameter = Target brightness
  • Fourth parameter = Actual white point x coordinate
  • Fifth parameter = Actual white point y coordinate
  • Sixth parameter = Actual brightness

Set the brightness and white point: `(LSC+TARS "0.314" "0.351" "70.00")`

Return the brightness:
`(LSC+WHTP?)`
Result:
`(LSC+WHTP!"82.00")`
where the returned parameter indicates the actual brightness.

Set the brightness: `(LSC+WHTP "82.00")`

LVO–Lens Vertical Position Adjustment

Adjusts the lens offset to a specific vertical position with a specified direction.

In most cases the active lens is specified by the current channel. If a user selects a different lens file in the ILS File Setup panel of the user interface, the selected lens file becomes active. This file may be different from the one specified by the current channel.

Parameters

- **Access level:** Operator
- **Power level (minimum):** Power Up

Commands

Command	Description	Values
LVO?	Returns the current motor position along the vertical axis and direction. (Read-only)	—
LVO <position> <1 | -1>	Moves the lens mount to a specified vertical position with a specified direction.	position = Numeric value -1 = Negative approach 1 = Positive approach
LVO+MOVR <step>	Moves the motor a given number of steps based on the current location.	step = Numeric value
LVO+STOP	Stops the motor.	—
LVO+STRT <1 | -1>	Starts the motor moving in a specified direction.	-1 = Negative approach 1 = Positive approach

Examples

Return current motor position along the vertical axis and direction: `(LVO?)`
Move lens to position 500 along the vertical axis with a positive approach: `(LVO 500 1)`
Move lens to position 500 along the vertical axis with a negative approach: `(LVO 500 -1)`
Move the motor 100 steps in a negative direction: `(LVO+MOVR -100)`
Move the motor 200 steps in a positive direction: `(LVO+MOVR 200)`
Stop the motor: `(LVO+STOP)`
Start the motor moving in a positive direction: `(LVO+STRT 1)`

MCG–Measured Color Gamut

Gets or sets the measured color gamut (MCGD) file and measured values.

Parameters

- **Access level:** Installer
- **Power level (minimum):** Power Up

Commands

Command	Description	Values
MCG?	Returns the active MCGD file. (Read-only)	—
MCG?L	Returns a list of all available MCGD files. (Read-only)	—
MCG "<value>" <0 | 1>	Sets the MCGD file to the specified file for the active channel.	value = Subject to the range returned in MCG?L 0 = Sets 2D MCGD channel setting 1 = Sets 3D MCGD channel setting
MCG+CHAN? "<channel>" <0 | 1>	Returns the MCGD file for the specified channel. (Read-only)	channel = Name of a specific channel 0 = Gets 2D MCGD channel setting 1 = Gets 3D MCGD channel setting
MCG+CHAN "<channel>" "<value>" <0 | 1>	Sets the MCGD file for the specified channel.	channel = Name of a specific channel value = Subject to the range returned in MCG?L 0 = Sets 2D MCGD channel setting 1 = Sets 3D MCGD channel setting
MCG+DATA?	Returns the MCGD measurement values for the active channel. (Read-only)	—
MCG+DATA <redx> <redy> <greenx> <greeny> <bluex> <bluey> <whitex> <whitey> <blackx> <blacky>	Sets the MCGD measurement values for red, green, blue, white, and black. Values are divided by 10000 when using this subcode.	redx = Red x MCG redy = Red y MCG greenx = Green x MCG greeny = Green y MCG bluex = Blue x MCG bluey = Blue y MCG whitex = White x MCG

Command	Description	Values
		whitey = White y MCG
		blackx = Black x MCG
		blacky = Black y MCG
MCG+SAVE "<value>"	Saves the active MCGD values to the specified file. If the file already exists, the contents are overwritten; otherwise, a new file is created.	value = MCG file name

Examples

Return the active MCGD file: (MCG?) Result: (MCG! "Nominal")
Return a list of all available MCGD files: (MCG?L) Result: (MCG!L001 001 000 "Nominal") (MCG!L001 001 001 "Nominal v2") ...
Set the 2D MCGD file for the active channel: (MCG "Nominal v2") or (MCG"Nominal v2" 0)
Set the 3D MCGD file for the active channel: (MCG "Nominal" 1)
Return the 2D MCGD file for the specified channel: (MCG+CHAN? "Media Block Flat") or (MCG+CHAN? "Media Block Flat" 0) Result: (MCG+CHAN! "Nominal")
Return the 3D MCGD file for the specified channel: (MCG+CHAN? "Media Block Flat" 1) Result: (MCG+CHAN! "Nominal v2")
Set the 2D MCGD file for the specified channel to the specified file: (MCG+CHAN "Media Block Flat" "Nominal v2") or (MCG+CHAN "Media Block Flat" "Nominal v2" 0)

Set the 3D MCGD file for the specified channel to the specified file: `(MCG+CHAN "Media Block Flat" "3D-MultiProj" 1)`	

Return the MCGD measurement values for the active channel:
`(MCG+DATA?)`
Result:
`(MCG+DATA! 0006800 0003200 0002650 0006900 0001500 0000600 0003140 0003510 0000000 0000000)`

Set the active MCGD measured values: `(MCG+DATA 0006800 0003200 0002650 0006900 0001500 0000600 0003140 0003510 0000000 0000000)`
Save the active MCGD measurement values to the specified file: `(MCG+SAVE "filename")`

MSG–User Message

Displays a message on the graphical user interface or writes a message to the projector logs.

The message on the graphical user interface appears in a popup window, which the operator can acknowledge.

Parameters

- **Access level:** Operator
- **Power level (minimum):** Power Down

Commands

Command	Description	Values
MSG+LOGE "<message>"	Writes a message to the error log.	message = Text string containing 128 characters or less
MSG+LOGN "<message>"	Writes a message to the notice log.	
MSG+LOGW "<message>"	Writes a message to the warning log.	
MSG+USER "<message>"	Displays a message on the graphical user interface.	

Examples

Display Hello World! on the graphical user interface: `(MSG+USER "Hello World!")`
Write Hello World! as an error in the projector logs: `(MSG+LOGE "Hello World!")`

PNG–Ping

Returns basic projector information to the user, including the type of device and main software version.

Some devices have multiple CPUs, each with its own software version. Only the software version of what is considered to be the primary CPU, is returned.

Parameters

- **Access level:** None
- **Power level (minimum):** Power Down

Commands

Command	Description	Values
PNG?	Returns basic projector information. (Read-only) <type> <major> <minor> <maintenance> • <type> = 71 indicates a Series 4 cinema projector • <major>, <minor>, <maintenance> = Software version	—
PNG+BILD?	Returns the package version (build number).	—

Examples

Send a ping:
 `(PNG?)`
 Result:
 `(PNG!71 001 000 001)`
 Indicates Series 4 cinema projector type, software: 1 major, 0 minor, 001 maintenance.

Determine build number:
 `(PNG+BILD?)`
 Result:
 `(PNG+BILD!00044)`
 Indicates build number 44.

PWR–Power

Changes the power state of the product.

Parameters

- **Access Level:** Operator
- **Power level (minimum):** Power Down

Commands

Command	Description	Values
PWR?	Returns the current power state of the projector. (Read-only)	—
PWR <mode>	Changes the power mode.	0 = Turns the projector on and the light source off 1 = Turns the projector and light source on -2 = Enables Hibernate mode (only applies to CineLife+ 2K models) 3 = Sets the projector to standby mode 10 = Cool down lamp—projector stays in cooling down mode for 10 minutes after the light source is turned off (Read-only) 11 = Warm up—middle status between standby and full power mode (Read-only)
PWR+COOL?	Returns the status of the current cooling down timer. (Read-only)	—
PWR+STAT?	Returns the status of the current power state. (Read-only)	—

Examples

Return the target power state from the latest command sent to the projector: `(PWR?)`
Turn on the projector and turn off the light source: `(PWR 0)`
Turn on the projector and light source: `(PWR 1)`
Set the projector to standby mode: `(PWR 3)`
Return the time remaining (in seconds) for cooling down mode: `(PWR+COOL?)`
Return the projector power status: `(PWR+STAT?)`

SHU–Shutter

Opens and closes the shutter.

Parameters

- **Access level:** Operator

- **Power level (minimum):** Power Down

Commands

Command	Description	Values
SHU?	Gets the state of the shutter. (Read-only)	—
SHU <0 | 1>	Opens or closes the shutter.	0 = Opens the shutter 1 = Closes the shutter

Examples

Get the state of the shutter: (SHU?) Result: (SHU!0) Indicates the shutter is open.
Open the shutter: (SHU 0)
Close the shutter: (SHU 1)

SST–System Status

Retrieves the various system status groups.

To retrieve a single item, include the item index number (SST+*SUBCODE*?*yy*) where *yy* is the index number of the item. The response to each command is a single message for each item, with the format:

(SST+*SUBCODE*!*yyy zzz* "Status Text" "Status Description")

where

- *yyy* is the item index number
- *zzz* is the alert condition (0=Unknown, 1=OK, 2=Warning, 3=Critical Error, 4=Sensor Failure)

Parameters

- **Access level:** None
- **Power level (minimum):** Power Down

Commands

Command	Description	Values
SST?	Returns information on all status groups, with one message per item. (Read-only)	Where parameters are: P1 = Index number P2 = Error level P3 = Value P4 = Description Error level is: 001 = No errors or warnings 002 = Warning 003 = Critical error
SST+ALRM?	Returns a summary of any active alarms. (Read-only) **Note:** If no alarms are in the system, you may not receive a response for the `SST+ALARM?` query.	
SST+COOL?	Returns cooling data—cooling fans, air flow, and so on. (Read-only)	
SST+INTE?	Returns interlock data. (Read-only)	
SST+LAMP?	Returns lamp operational data. (Read-only)	
SST+LENS?	Returns lens data. (Read-only)	
SST+NTWK?	Returns network configuration. (Read-only)	
SST+SECU?	Returns security data. (Read-only)	
SST+SERI?	Returns serial numbers. (Read-only)	
SST+SYST?	Returns system data—power, hours of use, shutter open, and so on. (Read-only)	
SST+TEMP?	Returns temperature data. (Read-only)	
SST+VERS?	Returns version numbers. (Read-only)	
SST+VIDO?	Returns video related data. (Read-only)	

Examples

Return the projector status:

`(SST+ALRM?)`

Result:

`(SST+ALRM!000 002 "101" "Prism temperature")`

TCG–Target Color Gamut

Gets or sets the target color gamut file (TCGD).

The TCGD file describes the chosen output colorimetry from the projector.

Parameters

- **Access level:** Installer
- **Power level (minimum):** Power Down

Commands

Command	Description	Values
TCG?	Returns the active TCGD file. (Read-only)	—
TCG?L	Returns a list of all available TCGD files. (Read-only)	—
TCG "<file>"	Sets the TCGD file to the specified file for the active channel.	file = Subject to the range returned in TCG?L
TCG+CHAN? "<channel>"	Returns the TCGD file for the specified channel. (Read-only)	channel = Name of a specific channel
TCG+CHAN "<channel>" "<file>"	Sets the TCGD file for the specified channel.	channel = Name of a specific channel file = Subject to the range returned in TCG?L

Examples

Return the active TCGD file:
`(TCG?)`
Result:
`(TCG! "Rec. 709")`

Return a list of all available TCGD files:
`(TCG?L)`
Result:
`(TCG!L001 001 000 "Rec. 709")`
`...`

Set the TCGD file for the active channel to the specified file: `(TCG "P7v1")`

Return the TCGD file used by the specified channel:
`(TCG+CHAN? "Media Block Flat")`
Result:
`(TCG+CHAN! "DC28 DCI XYZE 314 351")`

Set the TCGD file for the specified channel to the specified file: `(TCG+CHAN "Media Block Flat" "Rec. 709")`

TMD–Time and Date

Sets the time zone and Daylight Saving Time, and reads the time and date.

Parameters

- **Access level:** Service
- **Power level (minimum):** Power Down

Commands

Command	Description	Values
TMD+DATE?	Returns the date in the format yyyy-mm-dd. (Read-only)	—
TMD+DSTA?	Returns the status of Daylight Saving Time. (Read-only)	—
TMD+DSTA <0 | 1>	Enables or disables the Daylight Saving Time.	0 = Disables Daylight Saving Time 1 = Enables Daylight Saving Time
TMD+TIME?	Returns the time in the format hh:mm:ss. (Read-only)	—

Examples

Return the date:
`(TMD+DATE?)`
Result:
`(TMD+DATE! "2023-08-21")`

Return the status of Daylight Saving Time: `(TMD+DSTA?)`
Disable Daylight Saving Time: `(TMD+DSTA 0)`

Return the local time:
`(TMD+TIME?)`
Result:
`(TMD+TIME! "12:18:49")`

Adjust the SM clock by 120 seconds: `(TMD+TOFF 120)`

UID–User ID

Allows users to log into the serial interface.

Parameters

- **Access level:** None
- **Power level (minimum):** Power Down

Commands

Command	Description	Values
UID?	Returns the current logged in user and their access level. (Read-only) The following are valid access permissions: 0 = None 10 = SNMP 20 = Operator 30 = Manager 40 = Installer 50 = Marriage 60 = Service 65 = ServicePlus	—
UID \<username\> \<password\>	Logs in with the username and password.	username = String value password = String value
UID	Logs out the current user. This also happens when a new user logs in.	—

Examples

Display the current logged in user and their access level: `(UID?)`
Log out the current user: `(UID)`
Log in as service: `(UID "service" "<password>")`

ZOM–Lens Zoom Position Adjustment

Sets the lens zoom.

In most cases the active lens is specified by the current channel. If a user selects a different lens file in the ILS File Setup panel of the user interface, the selected lens file becomes active. This file may be different from the one specified by the current channel.

Parameters

- **Access Level:** Operator
- **Power level (minimum):** Power Up

Commands

Command	Description	Values
ZOM?	Returns the current zoom motor position and direction. (Read-only)	
ZOM <position> <-1 | 1>	Moves the lens mount to a specified zoom position.	position = Numeric value -1 = Negative approach 1 = Positive approach
ZOM+MOVR <step>	Moves the motor a given number of steps based on the current location.	step = Numeric value
ZOM+STOP	Stops the motor.	—
ZOM+STRT <-1 | 1>	Starts the motor moving in a specified direction.	-1 = Negative approach 1 = Positive approach

Examples

Return current Zoom motor position and direction: `(ZOM?)`
Move Zoom to position 500 with a positive approach: `(ZOM 500 1)`
Move Zoom to position 500 with a negative approach: `(ZOM 500 -1)`
Move the motor 200 steps in a positive direction: `(ZOM+MOVR 200)`
Move the motor 100 steps in a negative direction: `(ZOM+MOVR -100)`
Stop the motor: `(ZOM+STOP)`
Start the motor moving in a positive direction: `(ZOM+STRT 1)`