LC200

CaptureVision Station

User Manual - English

[Important]

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https://www.MyLumens.com/support

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Table of Contents

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Copyright Information

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Chapter 1 Safety Instructions

Always follow these safety instructions when using the product:

1 Operation

1.1 Please use the product in the recommended operating environment.

1.2 Do not place product in tilted position.

1.3 Do not place the product on an unstable trolley, stand or table.

1.4 Do not use this product near water or source of heat.

1.5 Use attachments only as recommended.

1.6 Use the type of power source indicated on the product. If you are not sure of the type of power available, consult your distributor or local electricity company for advice.

1.7 Always take the following precautions when handling the plug. Failure to do so may result in sparks or fire:

- Ensure the plug is free of dust before inserting it into a socket.
- Ensure that the plug is inserted into the socket securely.

1.8 Do not overload wall sockets, extension cords or multi-way plug boards to avoid potential risks.

1.9 Do not block the slots and openings in the case of product. They provide ventilation and prevent the product from overheating.

1.10 Except as specifically instructed in this User Manual, do not open or remove covers, otherwise it may expose you to dangerous voltages and other hazards. Refer all servicing to licensed service personnel.

1.11 Unplug the product from the wall outlet and refer servicing to licensed service personnel when the following situations happen:

- If the power cords are damaged or frayed.
- If liquid is spilled into the product or the product has been exposed to rain or water.

2 Storage

2.1 Do not place the product where the cord can be stepped on as this may result in fraying or damage to the lead or the plug.

2.2 Never push objects of any kind through cabinet slots. Never allow liquid of any kind to spill into the product.

2.3 Unplug this product during thunderstorms or if it is not going to be used for an extended period.

2.4 Do not place this product or accessories on top of vibrating equipment or heated objects.

3 Cleaning

3.1 Unplug all the cables before cleaning. Use a damp cloth for cleaning. Do not use liquid or aerosol cleaners.

4 Remote control (if the accessories are equipped with remote control)

4.1 Using an incorrect battery type in the remote control may result in breakdown. Follow local instructions on how to dispose of used batteries.

- **FCC Warning**

This product has been tested and found to comply with the limits for a Class A computer device, pursuant to Article 15-J of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial environment.

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus," ICES-003 of Industry Canada.

Cet appareil numerique respecte les limites de bruits radioelectriques applicables aux appareils numeriques de Classe A prescrites dans la norme sur le material brouilleur: "Appareils Numeriques," NMB-003 edictee par l'Industrie.

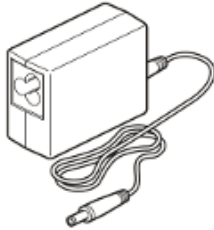**Lumens**®

■ **EN55032 (CE Radiation) Warning**
Operation of this equipment in a residential environment could cause radio interference.
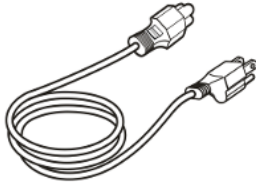
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Chapter 2 Package Contents

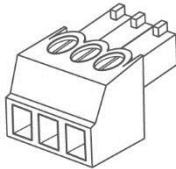| LC200	Power Adapter	Power Cord

Appearance may vary depending on country/region

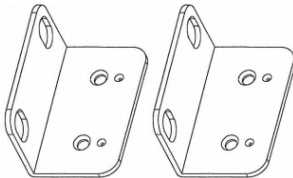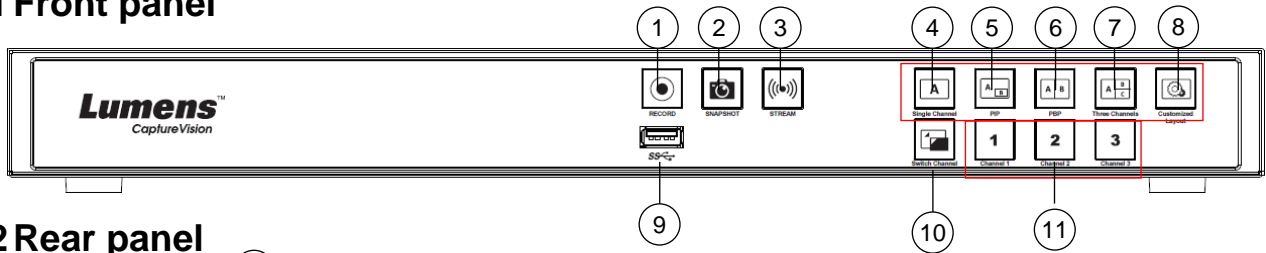| Quick Installation Guide	RS-232/RS-485 Connector (x2)	Mounting Metal Plate (x2)

Quick Installation Guide

M3x6 Flat Head Screw(x4)
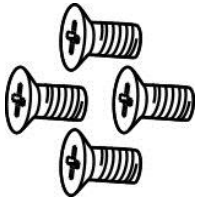
Chapter 3 Product Overview

3.1 Front panel

3.2 Rear panel
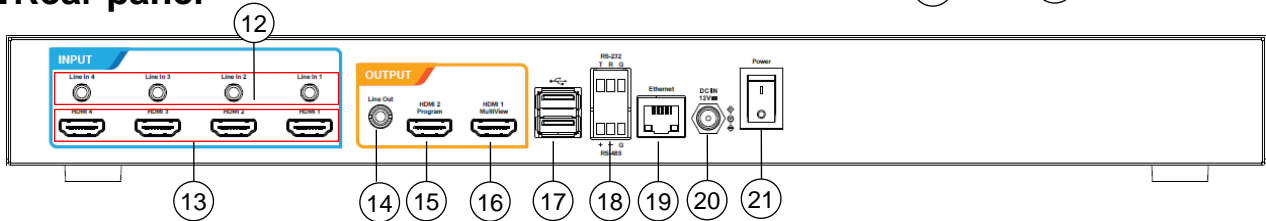
No	Name	Function Descriptions
1	RECORD	Start/Stop recording
2	SNAPSHOT	Capture a single photo
3	STREAM	On/Off image streaming
4	Single Channel	Display a single channel screen
5	PIP	Switch to PIP display
6	PBP	Switch to PBP display
7	Three Channel	Switch to three-channel display
8	Customize	Customize layout display
9	USB 3.0 Port	USB hard disk interface for storage
10	Switch Channel	Switches between signal sources
11	Channel 1 ~ 3	Quickly switch to CH1/CH2/CH3 signal sources
12	Line In (4 CH)	Line In / Mic In audio input
13	HDMI In (4 CH)	HDMI signal source input
14	Line Out	Allows line audio out to amplifier transfer
15	HDMI 2 Program	Main screen output, display the recording or streaming screen and layout
16	HDMI 1 MultiView	Operation interface output; display the device parameter setting menu and image management
17	USB 2.0 Port	Connect USB keyboard/mouse device operation menu
18	RS-232/RS-485 Port	Control the device through RS-232/RS-485
19	Ethernet	Connecting to LAN
20	DC IN 12 V	DC 12 V power connector
21	Power	On/Off the device power

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3.3 RS-232/RS-485 I/O pin description
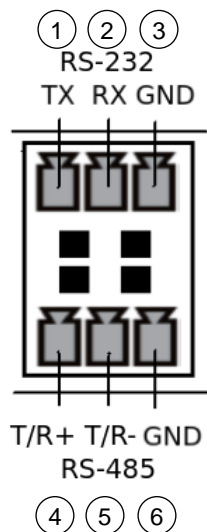
■ RS-232

Pin NO.	Function
1	TX+
2	RX-
3	GND

■ RS-485

Pin NO.	Function
4	T/R+
5	T/R-
6	GND

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Chapter 4 Instruction for installation

4.1 Product connection diagram

Microphone   Amplifier   Display (Program)   Display (MultiView)   Router   Power Cord

Line/MIC device Audio In   HDMI output   LAN   Power Supply

HDMI Source Input   Audio Output   USB Control   RS-232/RS-485 Control

Digital Presenter   Box Cam   IP Camera   Computer   Speaker   External Keyboard/Mouse   Environment Control Equipment
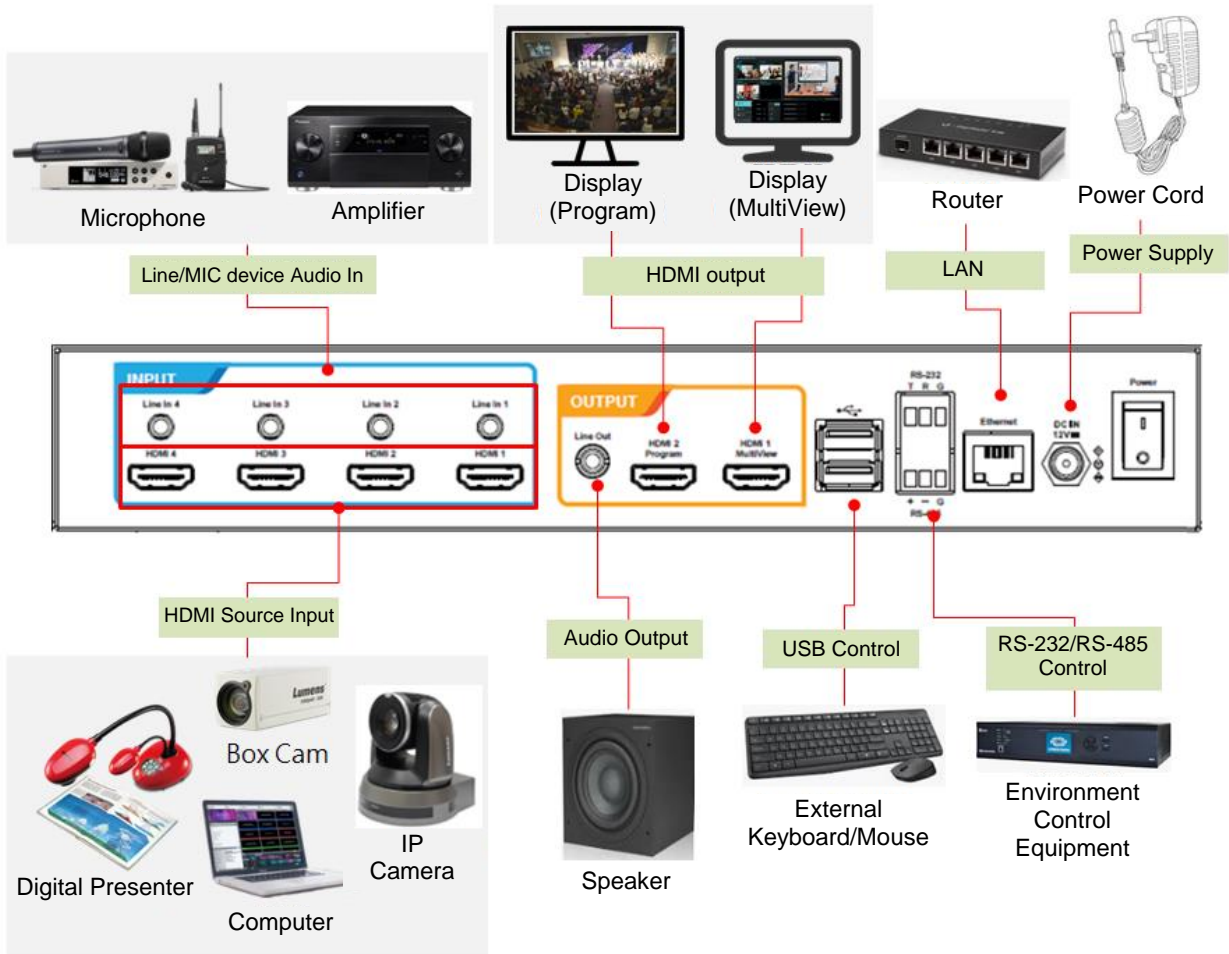
Chapter 5 Function Description

5.1 Real-time operation menu

Connect the HDMI1 MultiView output to the display panel to show the real-time operation menu

Connect the keyboard/mouse through the USB port and use the keyboard/mouse to select the menu settings
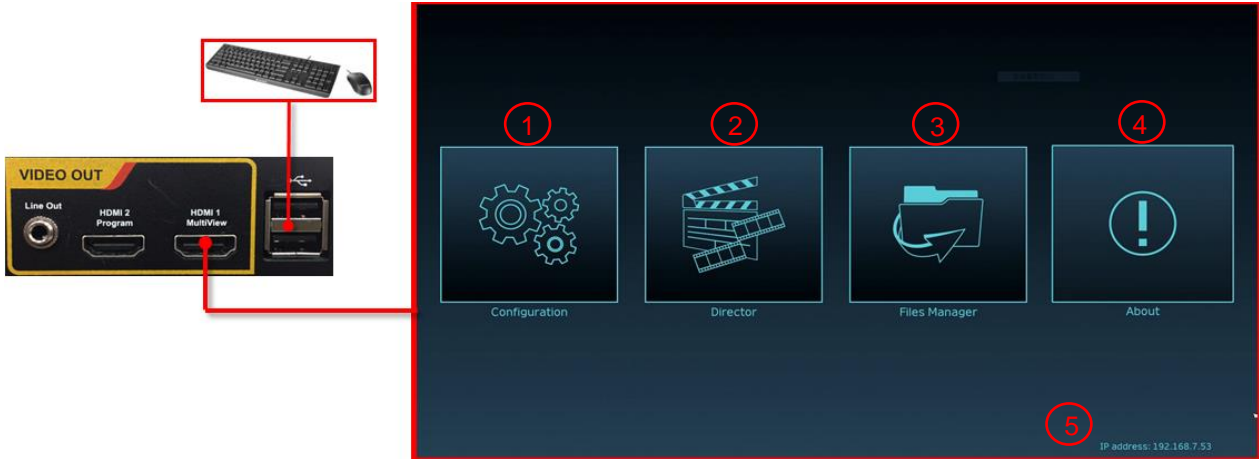
No	Icon	Name	Function Descriptions
1		Parameter setting	Perform the system network setting, recording/streaming compress setting
2		Casting Management	Input signal source selection, audio management, recording/streaming control, output version selection, and network video camera control
3		File management	Conduct the video file content management, including the following functions: Upload, download, delete, replay video files
4		About	Display the current firmware version and relevant production information of LC200
5	NA	Device IP	When connecting to the router, the current assigned device IP address will be displayed

5.2 Parameter setting

This Section provides descriptions of the web-based interface to control the display items. HDMI MultiView only provides items of [System Settings] and [Video Settings].

5.2.1 System Settings

5.2.1.1 System Settings

You may set up the device's basic information, initial date and time, and others here.

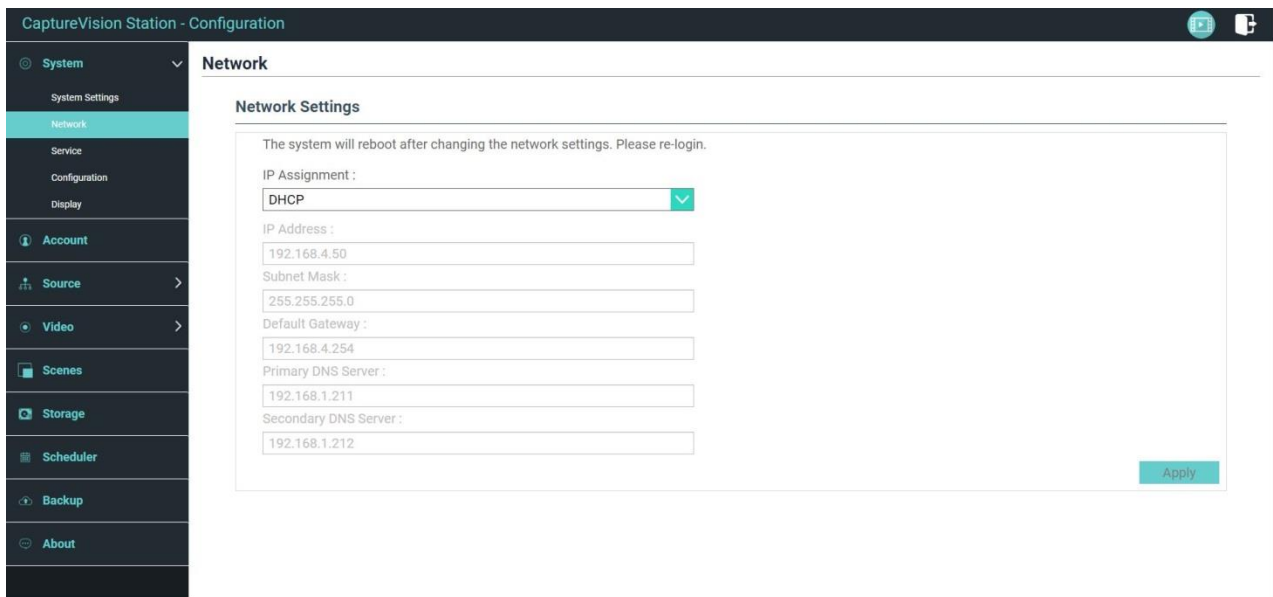| No	Item	Function Descriptions
1	Device Identification	Defines the device name and device description for LC200 ※Display name only accepts English characters and numbers
2	Date & Time	LC200 supports different time zone setting. It can synchronize time with NTP service (default) and manual setup ■ Time Zone: Select the correct time zone according to current location ■ Configuration Mode: ➢ NTP service: Synchronize time with a network server ➢ Manual Setup: Set time manually
3	Frame Rate Mode	You can configure the output frame rate at 30/60 fps ※If the frame rate setting of LC200 is 60 fps ➢ Up to 2 network image inputs are supported ➢ Recording can only be Movie Mode ➢ Streaming video compression format is the same as recording
4	Welcome Image	You can customize a welcome image for LC200 1 Click [Browse] and select a file to upload. Once done, a thumbnail will be

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		generated
		※File format:
		➢ File format: PNG
		➢ File Size (Max.): 3 MB
		➢ Resolution Size (Max.): 1920 x 1080
		2 Click [Apply] to save this change. If you need to select another file, click [Cancel] and reselect a file

[Remark] You can select different system frame rates in the frame rate mode that affects the supported recording mode and network streaming number. Please refer to the following restrictions on use.

System Frame Rate	Supported Recording Mode	Streaming Video Compression Settings	Network Streaming (IP)		MultiView signal source selection limits	PGM Maximum Split-screen Quantity
			Maximum number of streams supported	Maximum frame rate supported		
FPS30	Resource Mode	Full HD 30 FPS HD 30 FPS SD 30 FPS	3 streams	Full HD 30 FPS	IP + HDMI = 4 channels IP ≤ 3 (only CH1~3 available for selection)	4 channels
FPS60	Movie Mode	Full HD 60 FPS	2 streams	Full HD 60 FPS	IP + HDMI = 4 channels IP ≤ 2 (only CH1~2 available for selection)	2 channels

### 5.2.1.2 Network

The factory reset of LC200 is DHCP. The IP address is assigned by the connecting LAN router. If you want to use a static IP address, please configure the connection here.

No	Item	Function Descriptions
1	Ethernet Setting	■ DHCP: Dynamic IP address as default ■ Static IP: Configure static IP address according to the network and

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|		manually enter network information
		Select and fill in required network setting information and click [Apply] to save the settings
		※**The system will restart after changing network setting. Please connect and log in again**

5.2.1.3 Services
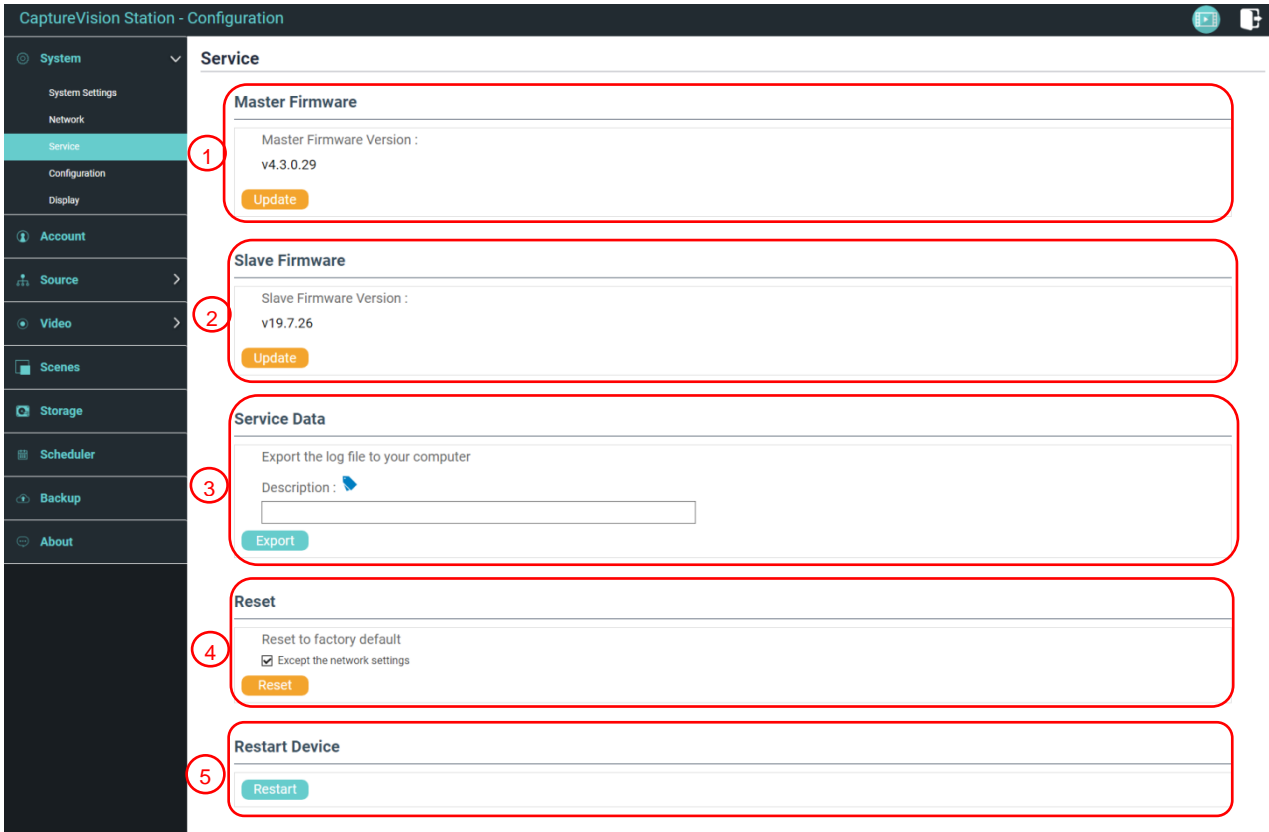
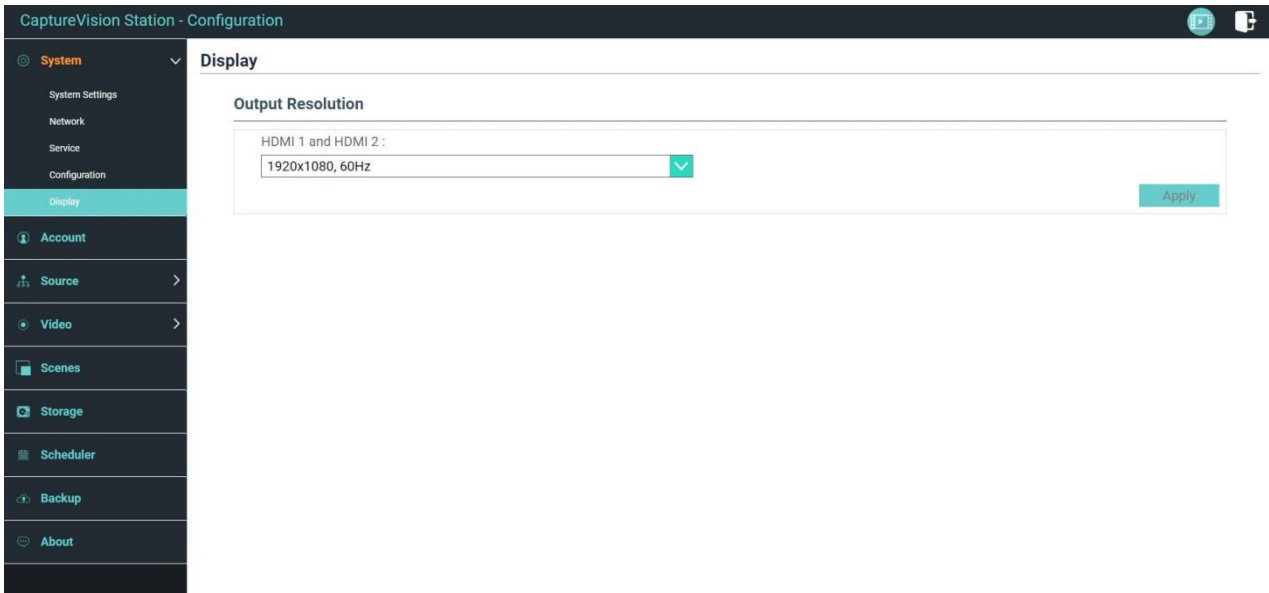| No	Item	Function Descriptions
1	Main Firmware	Main firmware information and update Click [Update] and select the main firmware file to update
2	Secondary Firmware	Secondary firmware information and update Click [Update] and select the secondary firmware file to update
3	Service History	Saves system log files to user's computer 1　Enter file name 2　Click [Export] to export system log files ※The length of file name must be between 0 ~ 16 characters. {}()'&@~^$%"|,`:?<>*\/#; symbols, and space are forbidden
4	Reset	Restores LC200 to factory reset ※Check [Keep Network Settings] and the network settings will be remained
5	Restart the device	Restart the LC200

5.2.1.4   Setting File

You can export the configuration files of the device to a computer, and import the configuration files to another device to apply the same configuration.
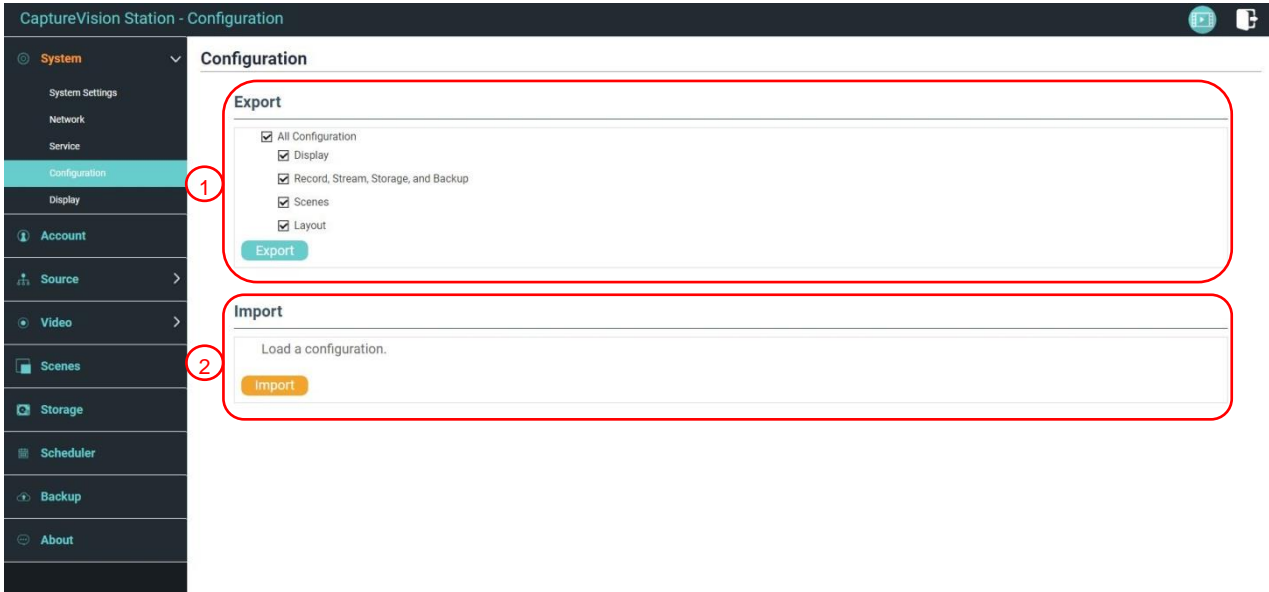
No	Item	Function Descriptions
1	Export	Export the current configuration of LC200 as a configuration file
2	Import	Import the exported configuration files from a LC200 to another LC200

5.2.1.5   Display Settings

No	Item	Function Descriptions
1	Output Resolution	Select a HDMI output resolution on LC200

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5.2.2 Account

You can manage accounts for 3 kinds of user mode here: modify the user name and password to [System Management], [Director], and [Content Management].

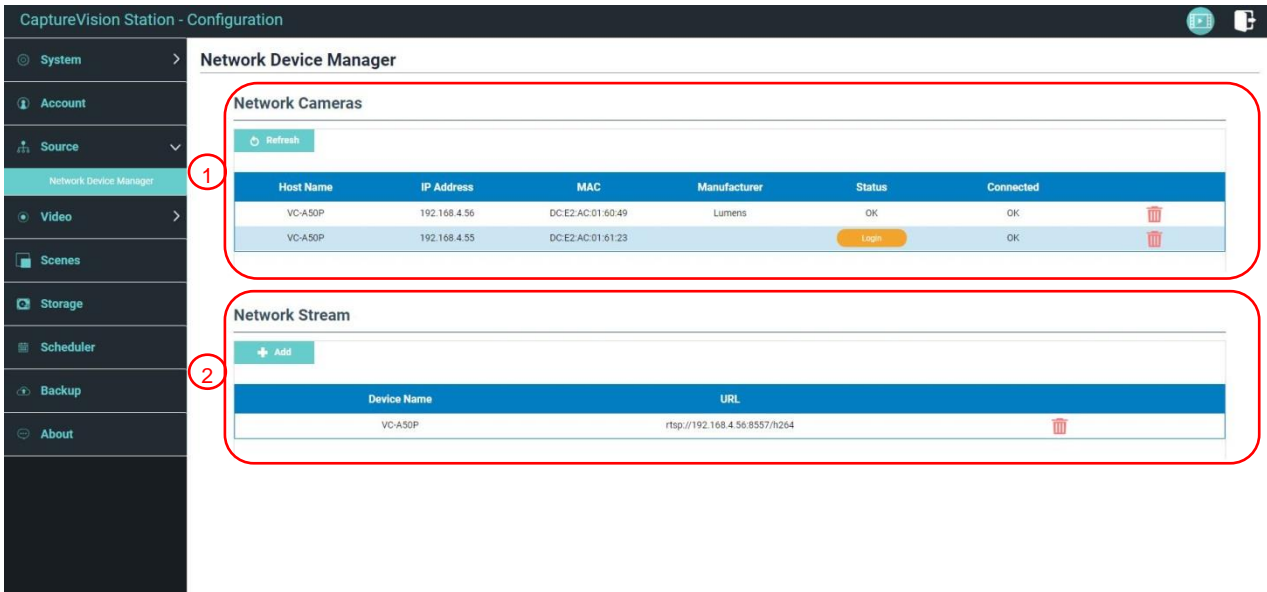| No	Item	Username/Password	Function Descriptions
1	System Management	admin / admin	Sets up the permission of main system management
2	Director	director / director	Manages playback and changes simple basic image settings and the permission of Director
3	Content Management	vdeo / video	Views the permission of file storage and playback

※Note:

The length of user name must be between 4 ~ 16 characters. {}()'&@~^$%"|,`:?<>*∨#; symbols, and space are forbidden
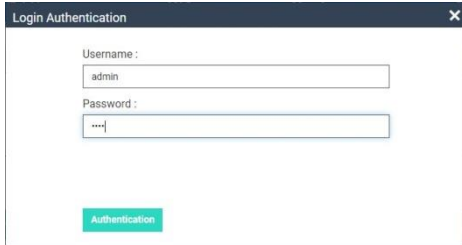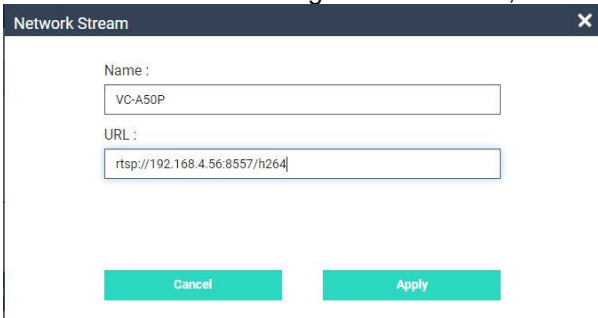
The length of password must be between 8 ~ 16 characters. {}()'~^"|,`:?<>*∨; symbols, and space are forbidden
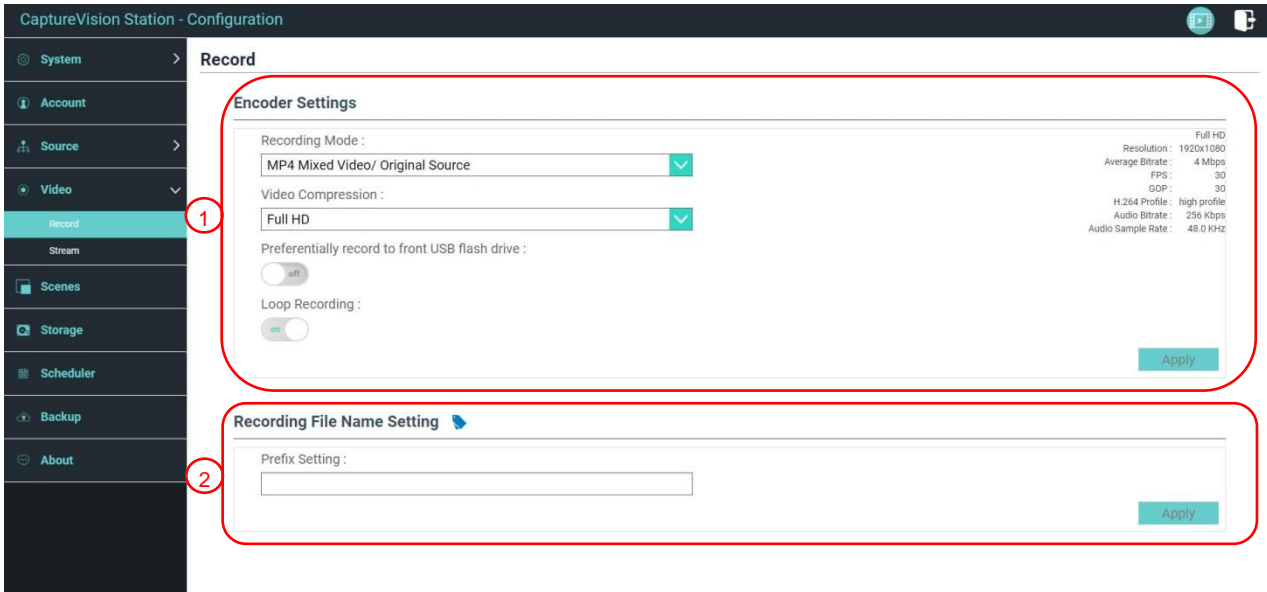
Duplicate username is forbidden

5.2.3 Video Source

5.2.3.1 Network Device Management

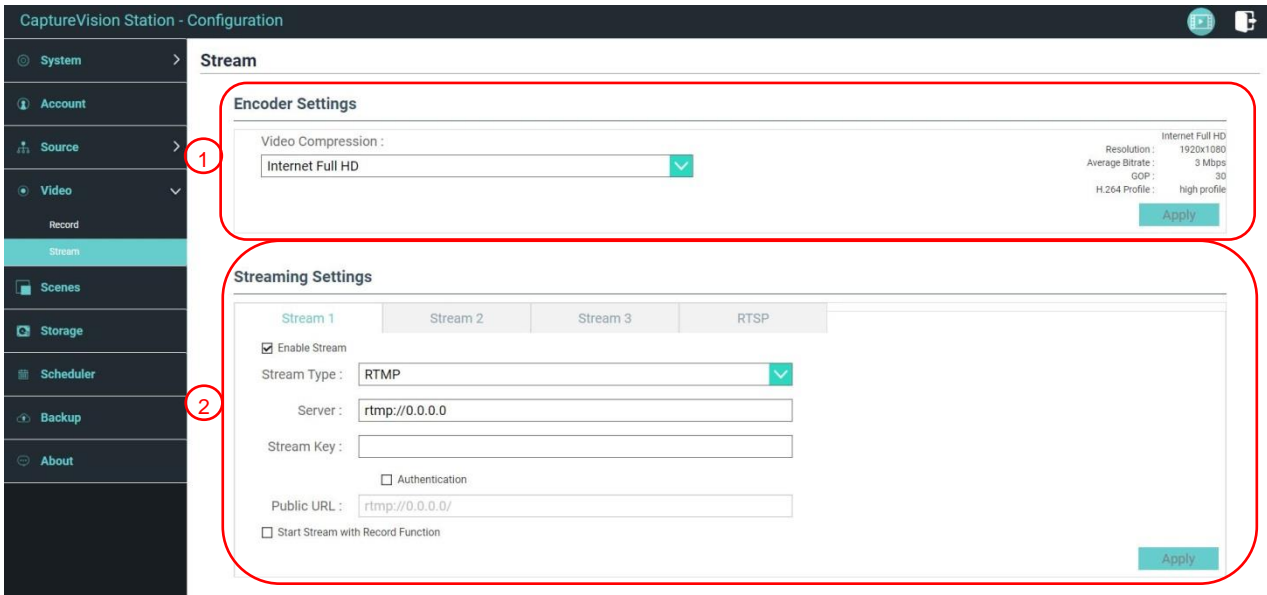| No	Item	Function Descriptions
1	Network Camera	1 Click [Refresh] and automatically scan the network cameras in the same LAN 2 Click [Login Verification] and enter login information to connect the camera Lumens Network Camera ● Account: admin ● Password: 9999 3 Once the status display "OK", indicating that the image can be set under the signal source input selection.
2	Network Streaming	1 Click [Add] 2 Enter the network streaming name and URL, and then click [Apply] 3 The newly added network streaming name will be displayed in the list

5.2.4 Video Settings

5.2.4.1 Record Settings

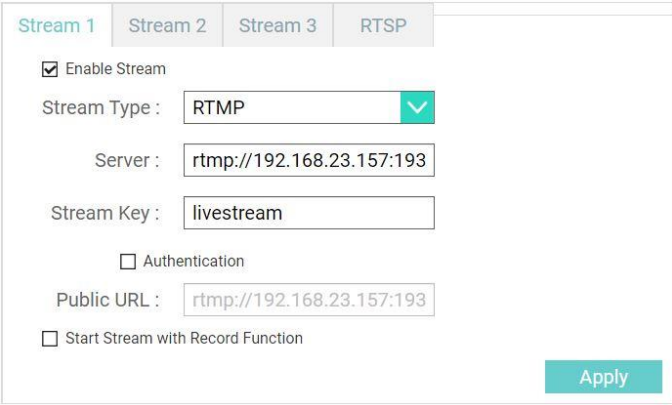| No	Item	Function Descriptions

1	Encoder Settings	■ Recording Mode: You can select Movie Mode (MP4) and Movie/Resource Mode (MP4)
		  ➢ Movie Mode: Only record the single PGM 4-channel composite screen
		  ➢ Resource Mode: Can record the single PGM 4-channel composite screen and 4 signal source screens
		■ Encode Profile: 6 default encoding formats are available to be selected by resolutions and average bitrate (Please refer to the instructions of Encode Profile). You can also set user-defined image quality.
		■ Preferentially record to front USB hard drive: Videos or pictures will be preferentially recorded to the USB flash drive which has already been connected to the front USB port.
		■ Cycling Record: Enabling the cycle record function can prevent recording error when storage device is full

2	Video File Name Setting	Customizes the prefix name of video file

■ Instruction on Encode Profile

Name	Video Resolution/ABR	Description
Full HD	1080p / 4 Mbps	Dynamic scene; Large film site; Local drive recording
Internet Full HD	1080p / 3 Mbps	General scene, Medium film site, Local drive recording
HD	720p / 2 Mbps	Static scene, Small film site, Local drive recording
Internet HD	720p / 1.5 Mbps	LAN director
SD	480p / 800 kbps	Static scene, LAN director
Mobile network SD	480p / 500 kbps	Director via mobile device
User-Defined	Click [ ] to open Custom (as shown in the following figure). Once done, click "Save".	

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5.2.4.2 Streaming Settings

You may change the streaming settings here. Related settings must follow the streaming protocol and the settings recommended by server system support.
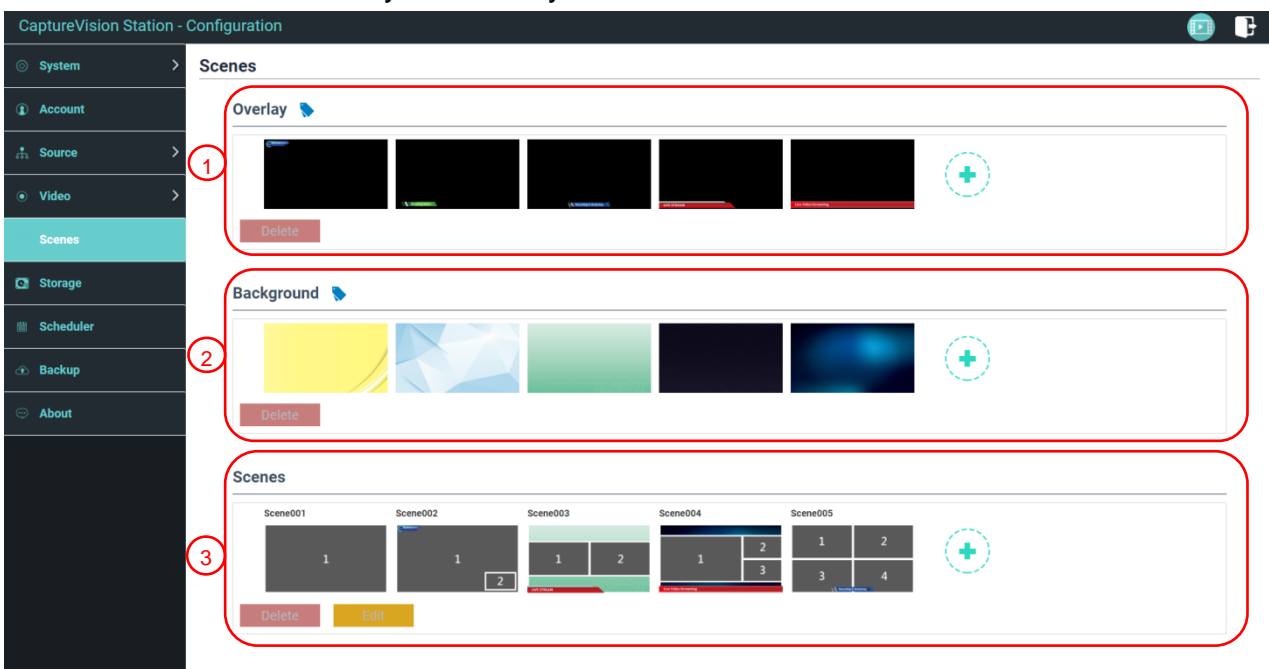

No	Item	Function Descriptions
1	Encoder Settings	Encode Profile: 6 default encoding formats are available to be selected by resolutions and average bitrate (Please refer to 5.2.4.1 for the instructions of Encode Profile in Network Settings). You can also set user-defined image quality.
2	Streaming Settings	■ Streaming 1 / Streaming 2 / Streaming 3: You can customize 3 podcast addresses of network streaming Supported streaming type: RTMP / RTMPS / RTP / Youtube / Youtube_Gaming / Facebook Live / Twitch / Smashcast ■ Real Time Streaming Protocol (RTSP): You can customize the real time streaming route of LC200 Default RTSP location: rtsp://LC200_IP_address:554/pgm

2		

5.2.5 Scene

LC200 provides 5 overlay styles, 5 background images, and 5 scenes. You can also add your own styles.

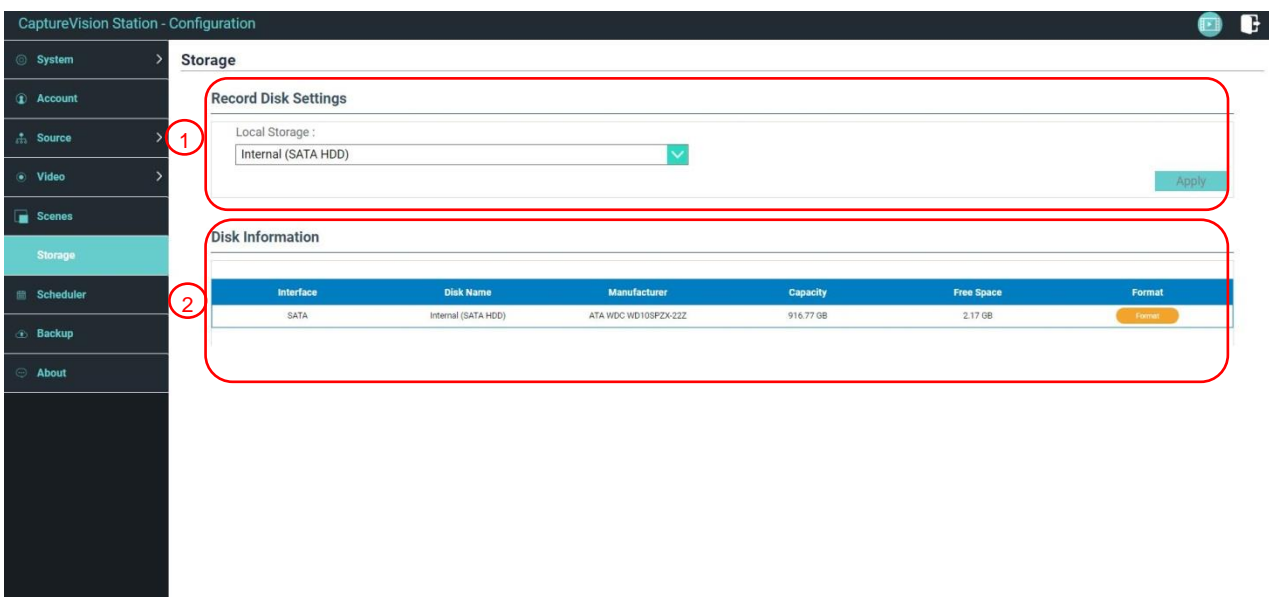| No	Item	Function Descriptions
1	Overlay	Select and delete overlay style. You can upload files to apply. Click [➕] and select a desired file from the window. Check the preview image and file name, and click [Apply] to start uploading and applying this overlay style. Click [Delete] to cancel the upload. ※File format: ➢ PNG format ➢ **Supported size:** (a) 1920 x 136 (b) 1080 x 240 (c) 800 x 320 (d) 640 x 400
2	Background Image	Select and delete background image. You can upload files to apply. Click [➕] and select a desired file from the window. Check the preview image and file name, and click [Apply] to start uploading and applying this background image. Click [Delete] to cancel the upload. ※File format:

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		➢ PNG format
		➢ Supported size: 1920 x 1080
3	Scene	Scene is the integration of "Overlay," "Background Image," and "Recording Layout," which provides the scene made of different background images, layout, and overlay style. You can customize the layout content in 9 scenes.
		Click [➕] to open scene settings. Enter the scene name and select the required overlay, layout, and background image. Once done, click "Apply".

5.2.6 Storage Settings

You can set up recording storage, cycle recording, and view hard drive information here.

No	Item	Function Descriptions
1	Recording Hard Drive Setting	Local storage: Select a storage from internal hard drives Click drop-down menu ∨ and select local storage hard drive
2	Hard Drive Information	Display hard drive information, free space, and capacity. Click "Format" to clear the internal storage devices. Confirm if you want to format the hard drive in the pop-up dialog and click "Confirm" to delete all video files.

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5.2.7 Schedule Setting

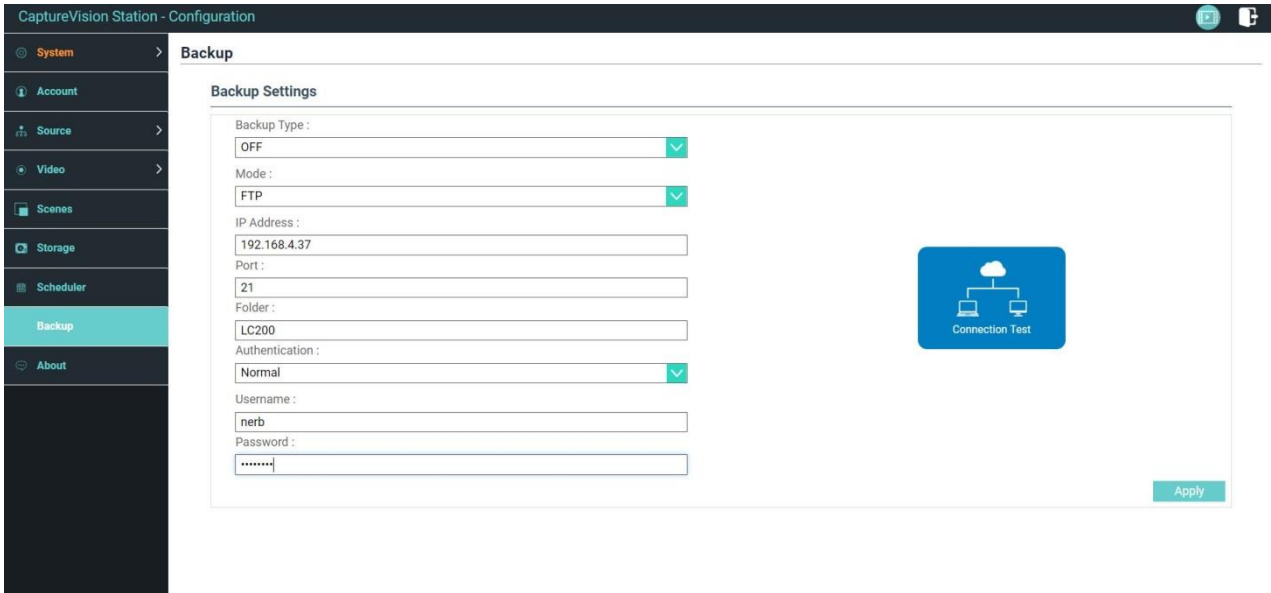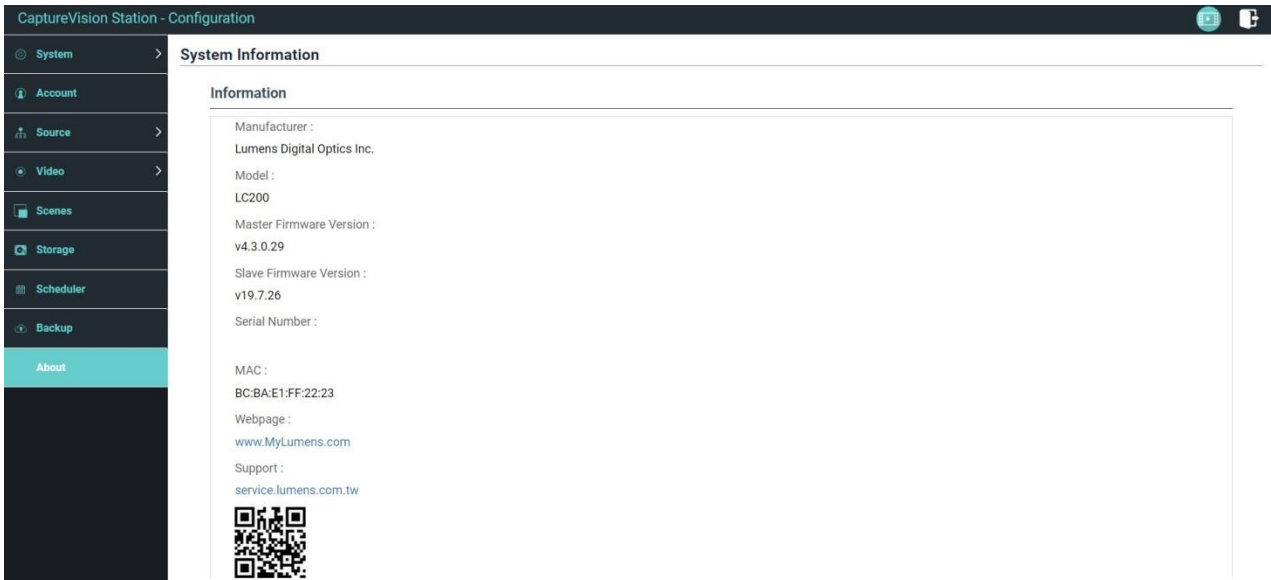| No	Item	Function Descriptions
1	Schedule Setting	■ Click [On/Off] : Enables/Disables schedule function ■ Click [Calendar] : Check the current schedule status 　※Reset schedule source and replace the current schedule ■ Schedule source: 　➤ Scheduling via the Opencast server: 　　Enter the login information of the Opencast server to synchronize schedules 　➤ Importing calendar manually: 　　You can import iCalendar files (e.g. Outlook or Google Calendar) 　　Click [Import] and select custom scheduled video file 　　※Only files in .ics format can be imported 　➤ Importing calendar periodically 　　You can synchronize schedules from network servers (e.g. Google Calendar) 　　※Please refer to the videos of How-to series on Lumens™ website and YouTube channels for related application settings.
2	Cancel Recording	Click [Stop] to stop the current scheduled recording

5.2.8 Backup Setting

LC200 provides auto backup service which can upload videos to a designated space automatically. You can set up upload destination and test the connection here.

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Backup

Backup Settings

Backup Type :
OFF

Mode :
FTP

IP Address :
192.168.4.37

Port :
21

Folder :
LC200

Authentication :
Normal

Username :
nerb

Password :
••••••••

Connection Test

Apply

No	Item	Function Descriptions
1	Upload Setting	■ Auto upload: Disable / Upload right after recording completes / Upload periodically ■ Mode: FTP / SFTP / Kaltura / Panopto / Opencast HTTP / Opencast HTTPS ■ Connection Test: Click [Connection Test] to test if a connection can be created with the current setting ※ Please refer to the videos of How-to series on Lumens™ website and YouTube channels for related application settings.

5.2.9 About

LC200 Device-related Information: Firmware version, device serial number, and technical support link

System Information

Information

Manufacturer :
Lumens Digital Optics Inc.

Model :
LC200

Master Firmware Version :
v4.3.0.29

Slave Firmware Version :
v19.7.26

Serial Number :

MAC :
BC:BA:E1:FF:22:23

Webpage :
www.MyLumens.com

Support :
service.lumens.com.tw

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5.3 Director

LC200 is built in Director, which allows you to monitor recording and preview the output video from streaming director.

Related feature description as below:
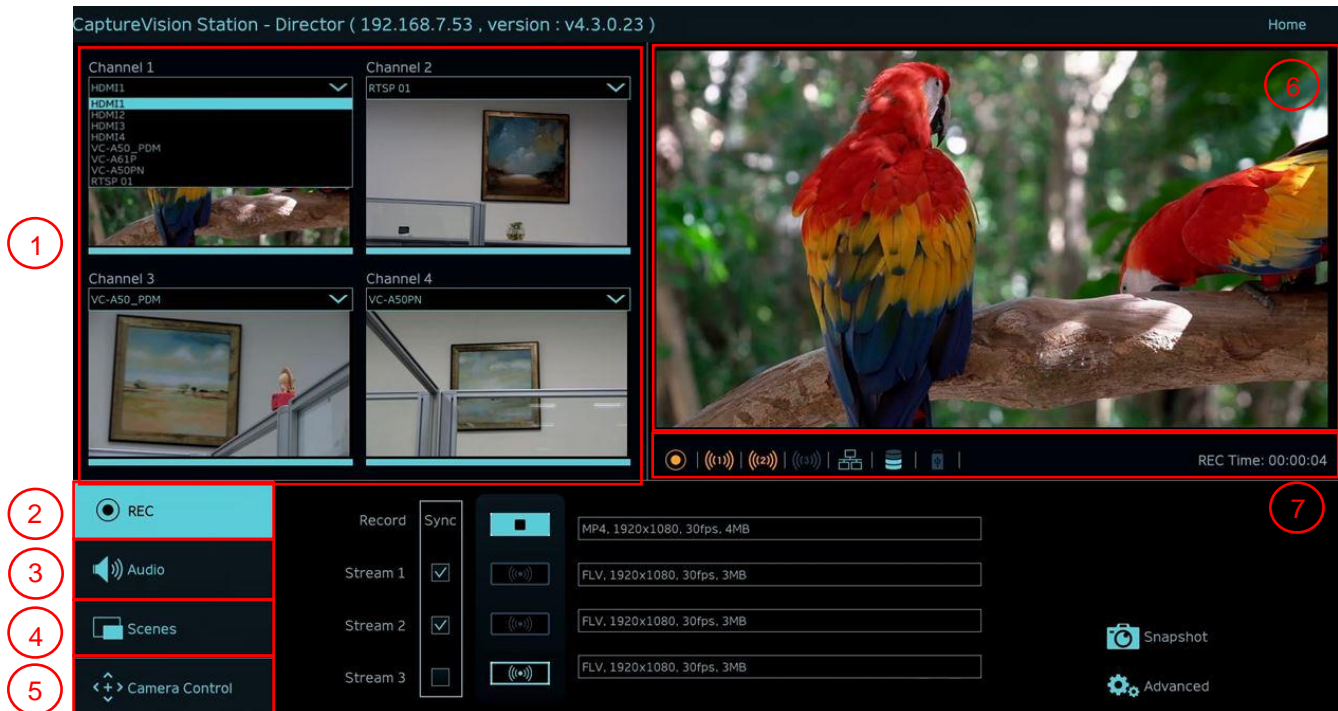
No	Item	Function Descriptions
1	Channel Signal Selection	The drop-down menu of image sources includes 4-channel HDMI source, IP camera, or streaming image
2	REC Record Setting	Start or stop recording; also select whether to synchronously stream or not
3	Audio Source Management	Manage the input and output audio source; adjust the audio volume of the recording
4	Scenes Layout Setting	Fast select the recording layout, or customize the background and scene style
5	Camera Control	Provide the IP video camera PTZ control or simple function settings
6	Main Screen Output	Display the layout of current output screens
7	Recording Progress Bar	Display information of the current status of recording/streaming, such as hard drive capacity

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5.3.1 REC Record Setting

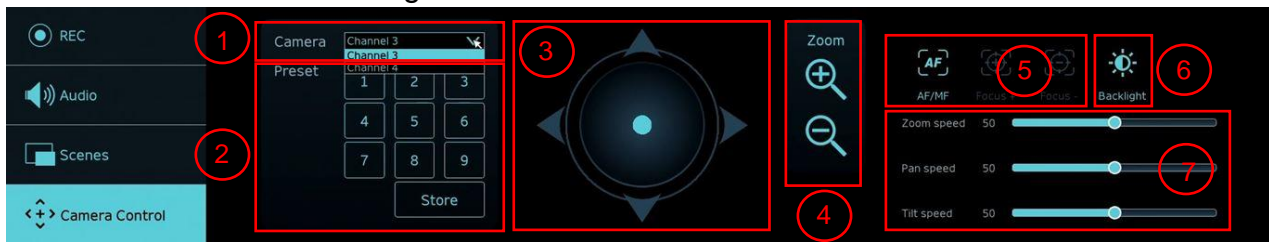| No	Item	Function Descriptions
1	Recording while Streaming	Check stream(s) and click recording button to strart streaming and recording function
2	Recording Button	Record the main screen image
3	Single-channel Streaming Button	Streams right away without starting recording function

5.3.2 Audio Source Management
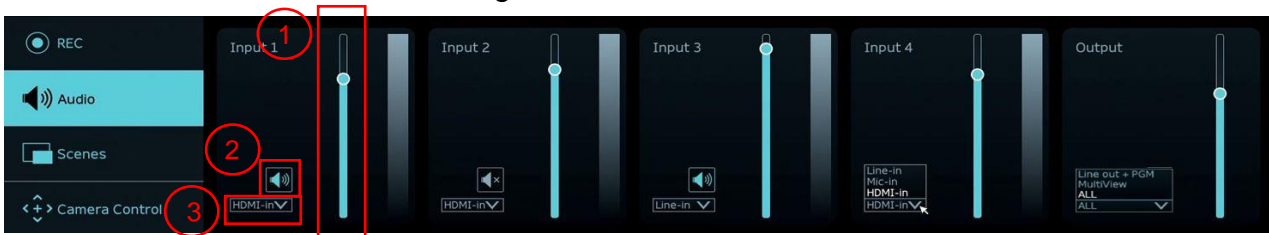
No	Item	Function Descriptions
1	Volume Control	Adjust the volume of audio input
2	Mute Button	Mute audio output
3	Audio Source Setting	Select a audio source

5.3.3 Scenes Layout Setting

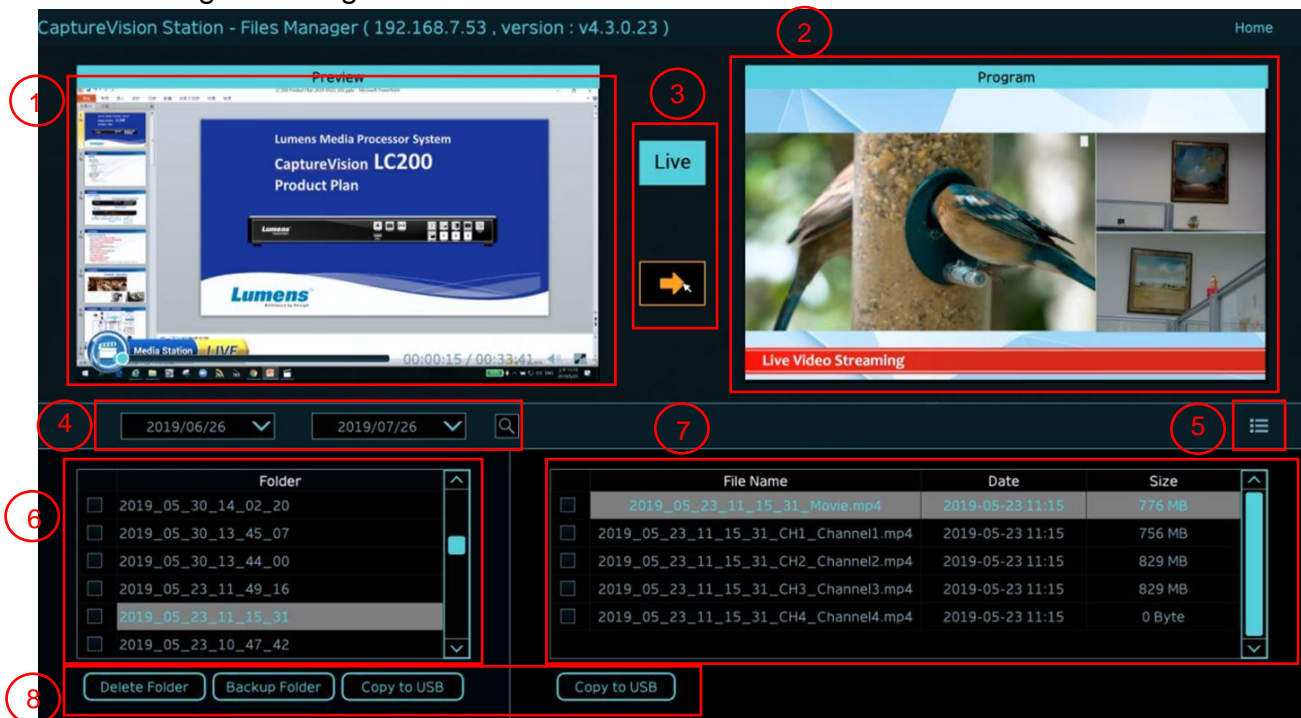| No	Item	Function Descriptions
1	Scenes	Scenes page is the integration of "Overlay," "Background Image," and "Recording Layout," which can perform a series of scene change according to your needs.
2	Layout	Apply a different layout to highlight the screen focus of different channels. Click a desired layout style to apply.
3	Overlay	Select a desired style to apply
4	Background	Display the background images supported by "Director" system. Click the thumbnail to apply

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5.3.4 Camera Setting

No	Item	Function Descriptions
1	Camera	Select a desired camera to control
2	Preset Setting and Call	Click number keys to perform preset settings and calls
3	Direction Control Panel	Move the center point to control the shooting direction
4	Zoom In/Zoom Out	Zooms in/out the lens
5	Focus Setting	Set up auto or manual focus
6	Backlight Compensation	Enables/disables backlight compensation
7	PTZ Speed Setting	Set up the moving speed of Pan Tilt Zoom

5.4 File management

LC200 provides file management feature which can perform the following functions via the file management interface: Upload, download, delete, replay video files and editing recording information.
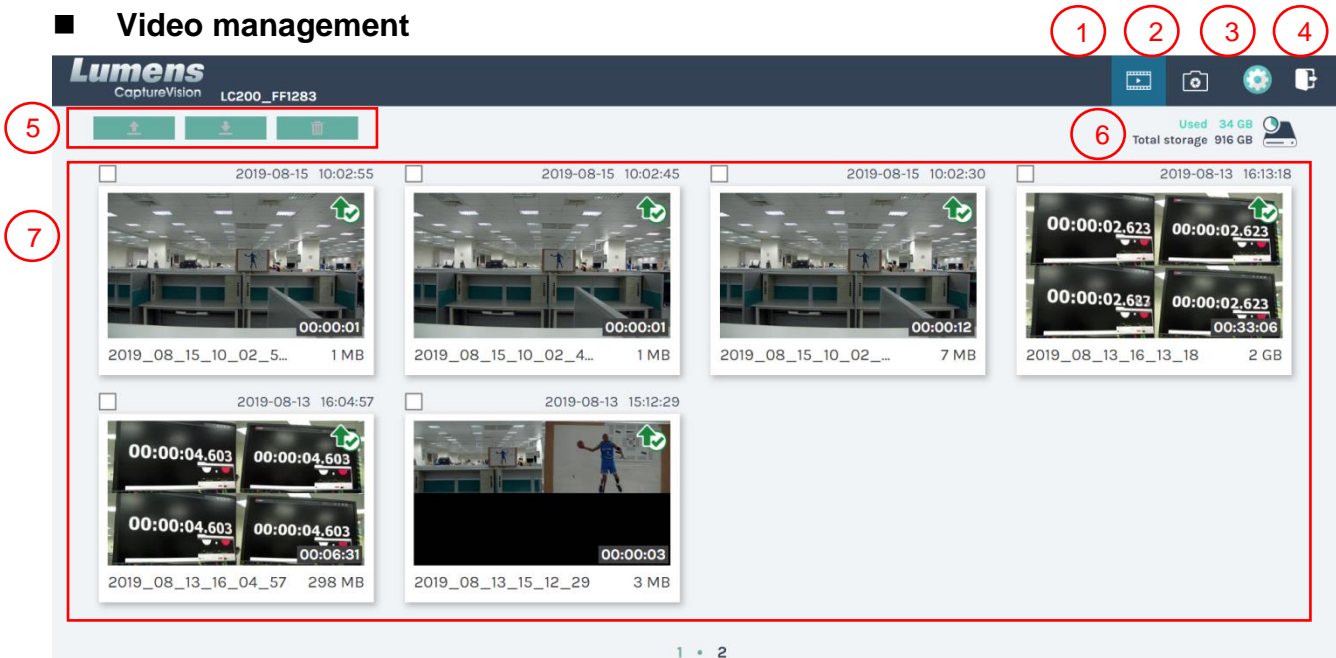

No	Item	Function Descriptions
1	Preview Screen	Click desired video files to play and control on the Preview screen
2	Program Screen	Display the Director screen or switch to synchronize with the Preview screen
3	Screen Switch Button	Switch the Program screen to the LIVE Director screen or the Preview screen
4	Discovery	You can search recording video files by selecting date period on the calendar
5	Display Mode Switch	Video view mode. You can switch to thumbnail mode or list mode
6	Folder Display	Display the recording video folders
7	Video File Display	Display the files in the video folder
8	File Management	Delete, backup or copy recording video to an external USB flash drive

5.4.1 Webpage Interface

The default page after accessing LC200 web page is system setting page. Click the

video management icon on the top-right corner to access video management

page.

■ **Video management**

No	Item	Function Descriptions
1	Video Management	Click to access the video management page
2	Photo Management	Click to access the the picture management page
3	System Settings	Click to access the system setting page ※ Caution: Log in the web page with admin/admin to display system setting subpage If you log in the web page with video/video, you will not find the system setting subpage and you can only manage videos and photos
4	Logout	Click this icon to log out the web page interface
5	File Management	Upload, download and delete the checked video files
6	Hard Drive Status Display	Display the used space and the capacity of the current hard drive
7	Video File Display	List information, including the file names of recording videos, thumbnails, capacity, and date

■ **File Management Description**

➢ **Uploading**

Check the thumbnails of the videos to upload. Click [ ] and the videos will be uploaded to the location set in Upload Settings. Please refer to [System Management/Upload Settings] for related settings.

Upload Status Description:

Icon	Upload Status	Icon	Upload Status
	Videos are uploaded successfully		Videos are queued for upload
	Fail to upload videos		Videos are uploading

➢ **Download**

Check the thumbnails of the videos to download. Click [ ] and the videos will be saved as MP4 video files and datasets.
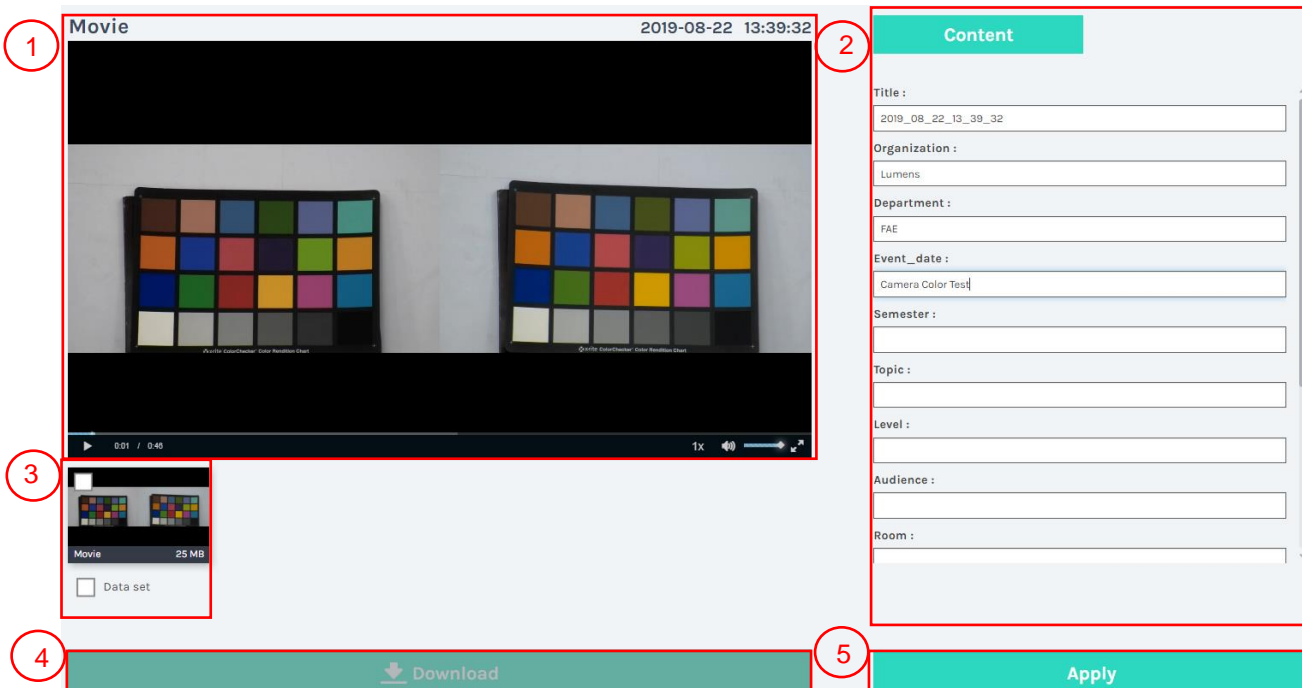If only video files are needed, you can click the video thumbnails and access video playback page to download the video files only.

➢ **Delete**

Check the thumbnails of the videos to delete. Click [ ] and the video files will be deleted for good.

■ **Video Playback**

Right-click video to preview the video, edit the related content data, and download the video file and dataset

No	Item	Function Descriptions
1	Video Control Window	Play back and control recording videos
2	Video Content	Edit and modify video content
3	Video File and Dataset	Select the video files or datasets to download
4	Download Button	Click this button to download the checked video files or datasets
5	Apply Button	After editing and modifying the video content, click this button to apply

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■ Photo Management

You can manage the photo files captured by pressing SNAPSHOT. Folders will be named with the shooting date automatically; all photos shot in the same date will be stored in the same folder.

Just like Video Management, you can also upload, download, and delete photos in Photo Management subpage.
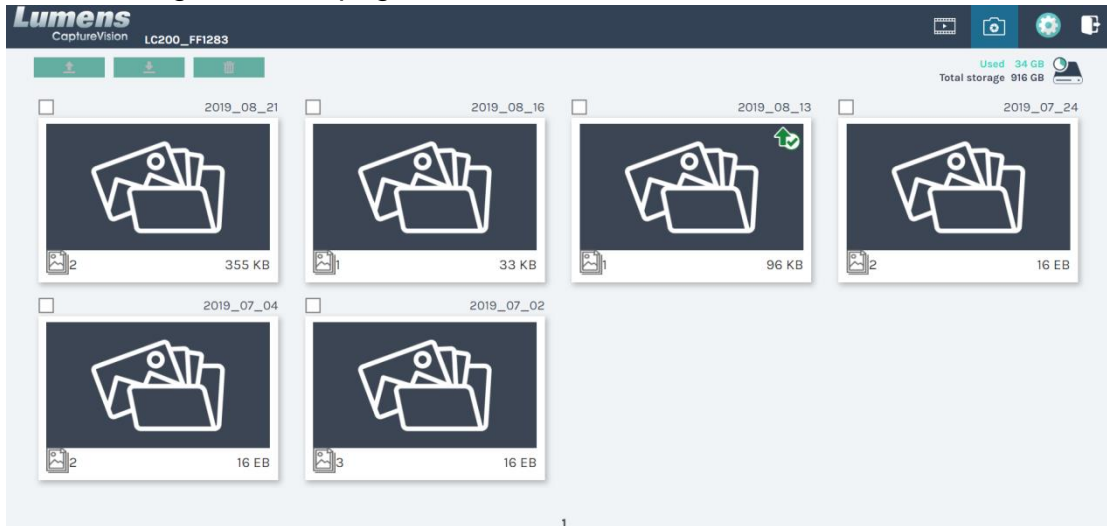
Chapter 6 Troubleshooting

This chapter describes problems you may encounter while using LC200. If you have questions, please refer to related chapters and follow all the suggested solutions. If the problem still occurred, please contact your distributor or the service center.

No.	Problems	Solutions
1.	**Boot without power signal**	Make sure you have plugged in the power cord
2.	**No image output**	1. Check the power 2. Check if the input/output device cables are loose 3. Replace the cables and make sure they are not faulty 4. Make sure if the signal source connects to the device correctly 5. LC200 cannot record video from a video output including HDCP format
3.	**The panel keys are not responding**	The panel become non-functional when logging into the system
4.	**LC200 cannot perform camera control after connecting to a camera**	Please make sure the dial setting of Camera Address Selector is 0. LC200 cannot identify camera correctly if it is not 0
5.	**You cannot log in the web page administration interface if you forget the password**	If you forget the default password, please press the panel concurrently Snapshot +Switch Channel buttons on the panel at the same time for 5 seconds to restore the factory reset
6.	**Selections of network streaming can not be more than 3 channels.**	You can select different system frame rates in the frame rate mode that affects the supported recording mode and network streaming number. Please refer 5.2.1.1 System Settings for the restrictions on use of the system frame rate