

## DC200 4K Document Camera

**User Manual - English** 



[Important]

To download the latest version of Quick Start Guide, multilingual user manual, software, or driver, etc., please visit Lumens <u>https://www.MyLumens.com/support</u>

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### *Lumens*<sup>®</sup> Chapter 1 Safety Instructions

Always follow these safety instructions when setting up and using the Document Camera:

#### 1 Operation

- 1.1 Please use the product in the recommended operating environment, away from water or source of heat
- 1.2 Do not place the product on a tilted position or unstable trolley, stand or table.
- 1.3 Please clean the dust on the power plug prior to usage. Do not insert the product's power plug into a multiplug to prevent sparks or a fire.
- 1.4 Do not block the slots and openings in the case of the product. They provide ventilation and prevent the product from overheating.
- 1.5 Do not open or remove covers, otherwise it may expose you to dangerous voltages and other hazards. Refer all servicing to licensed service personnel.
- **1.6** 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 Installation

2.1 For security considerations, please make sure the standard hanging rack you bought is in line with UL or CE safety approbations and installed by technician personnel approved by agents.

#### 3 Storage

- 3.1 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.
- 3.2 Unplug the product during thunderstorms or if it is not going to be used for an extended period.
- 3.3 Do not place the product or accessories on top of vibrating equipment or heated objects.

#### 4 Cleaning

4.1 Disconnect all the cables prior to cleaning and wipe the surface with a dry cloth. Do not use alcohol or volatile solvents for cleaning.

#### 5 Batteries (for products or accessories with batteries)

- 5.1 When replacing batteries, please only use similar or the same type of batteries.
- 5.2 When disposing of batteries or products, please adhere to the relevant instructions in your country or region for disposing of batteries or products.

#### Precautions



This symbol indicates that this equipment may contain dangerous voltage which could cause electric shock. Do not remove the cover (or back). No user-serviceable parts inside. Refer servicing to licensed service personnel.



This symbol indicates that there are important operating and maintenance instructions in this User Manual with this unit.

#### FCC Warning

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

#### Notice :

The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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#### IC Warning

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.

#### EN55032 CE Warning

Operation of this equipment in a residential environment could cause radio interference.

### *Lumens*<sup>®</sup> Chapter 2 Package Contents

DC000	Quiels Start Quide	
DC200	(For download of other language versions, please visit Lumens website)	HDMI cable
USB cable	Power Cord	Power Adapter
	Appearance may vary depending on country/region	
Microscope Adapter	Remote Control	
(Optional)		

### **Lumens**<sup>®</sup> Chapter 3 Product Overview



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3.1 Diagram of the relative position between a user and device



### **Lumens**<sup>®</sup> Chapter 4 Installation and Connections

### 4.1 System diagram



### **Lumens**<sup>®</sup> 4.2 Installing Application Software

The application software installed on the computer enables you to:

- > Control the DC200.
- Capture and record images.
- > Annotate the image, highlight important details and save it.
- Support the full screen function.

[Remark] Please refer to <u>Ladibug™ 4K software user manual</u> for installation steps and software operation.

### *Lumens*<sup>®</sup> Chapter 5 Start Using



- 1. Place an object to be displayed under the camera.
- 2. Turn on Power
- 3. Adjust the gooseneck and lens to the appropriate positions.
- 4. Press [AUTO TUNE] <sup>AUTO</sup> button to optimize the image. You are ready to teach/present.

**[Remark]** Each time the camera head is moved, press the [FOCUS] button to refocus the lens.

### **Lumens**<sup>®</sup> Chapter 6 Introduction of Panel, Remote Control and Setting Menu

#### 6.1 Functions of control panel and remote control

lcon	Name	Function Descriptions	Operation
Ċ	Power	Turn on and off. * Press and hold for 5 ~ 10 seconds to turn off.	Remote control/Co ntrol panel
<,≻ ∧,∨	Arrow Key	Move up, down, left or right to select the needed function.	Remote control/Co ntrol panel
N	FOCUS	Auto focus.	Either sides of the lens
AUTO	AUTO TUNE	Automatically adjust the image to have the best brightness and focusing performance.	Remote control/Co ntrol panel
	BRT+/-	Adjust the brightness of the image.	Remote control/Co ntrol panel
	CAPTURE	Capture images to USB disk (priority) or internal memory.	Control panel
	CAPTURE /DEL	Capture and save images to USB disk (priority) or internal memory while displaying live images. Delete files from the USB disk (priority) or internal memory while reading the stored files (in Playback mode).	Remote Control
	ENTER	Activate/Enter functions.	Remote Control
**** ENTER	ENTER/ FREEZE	Live image: Freeze the image. OSD mode: Activate/Enter functions.	Control panel

|--|

	FREEZE	Freeze the current image to remain temporarily on the screen. Press again to defreeze.	Remote Control
	LAMP	Lamp mode toggle switch.	Remote control/Co ntrol panel
	MASK	Activate Mask/Spotlight mode.	Remote Control
	MENU	Activate the setting menu/exit the menu.	Remote control/Co ntrol panel
	PAN	Enable/Disable the partial enlarged mode.	Remote Control
	PIP	Image comparison (to compare live images with stored image files).	Remote Control
	PLAYBAC K	Read files in the USB disk (priority) or internal memory.	Remote control/Co ntrol panel
	RECORD	Record motion images.	Remote Control
C	ROTATE	Screen rotation 0° / 180° / Vertical flip / Horizontal flip / 90° / 270°.	Remote Control
	SOURCE	Switch the input source between live image (default) or HDMI image.	Remote control/Co ntrol panel
0	ZOOM +/-	Increase or decrease the image size.	Remote control/Co ntrol panel

### **Lumens**<sup>®</sup> 6.2 Setting Menu

#### 6.2.1 Main menu

[Remark] Press [MENU] on the remote control or control panel to display the setting menu.



In the	Auto Tune Automatically adjust the image to have the best brightness and focusing performance.	*0	Slide Show Show the photos or videos stored in the USB disk (priority) or internal memory in slide mode.
, ,	<b>PAN</b> Enable/Disable the partial enlarged mode.		<b>Manual Focus</b> Manual Focus.
	LAMP Lamp mode toggle switch.	23	Rotate Set the rotation angle of the screen.
BA	<b>PIP</b> Compare live images with stored images.	Ø	<b>Settings</b> Set up various functions.

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	Brightness		Photo/Text
(-;¢;-)	Adjust the brightness of the	T	Select Photo/Text/Gray Mode.
	image.		
	Mask		Annotation
	Activate the mask mode.		Annotate or mark the image
	Zoom		Mode
(+)	Increase or decrease the image	12 A	Select image mode.
	size.		
	Spotlight		Exit
	Activate the spotlight mode.		Exit the setting menu

#### 6.2.2 Setting menu

1 <sup>st</sup> Level Major Items	2 <sup>nd</sup> Level Minor Items	Function Descriptions
	Capture Mode	Use the left and right arrow keys to select the capture mode.
	Capture Time	Use the left and right arrow keys to select the capture time. The setting range is 1 ~ 72 hours. <li><note> This will be active only when capture mode is set to time lapse.</note></li>
Capture	Capture Interval	Use the left and right arrow keys to select the capture interval. The setting range is 3 seconds ~ 5 minutes. <note> This will be active only when capture mode is set to time lapse.</note>
	Image Quality	Use the left and right arrow keys to select the image quality for the captured images and recorded videos.
	Slide Show	Show the photos or videos stored in the USB disk (priority) or internal memory in slide mode. <note> Upper limit: The maximum size of single photo is 7 MB.</note>
Storage	Delay	Use the left or right arrow keys to select the delay before changing to the next slide with setting for 0.5 ~ 10 seconds or Manual.
	Copy To USB Disk	Copy files from internal memory to the USB disk.
<u>[</u>		Delete all images in the USB disk (priority) or internal English- 14

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1 <sup>st</sup> Level Major Items	2 <sup>nd</sup> Level Minor Items	Function Descriptions	
		memory.	
	Format	Format the USB disk (priority) or internal memory.	
	Auto Exposure	Regardless of outside environment, the machine will adjust the brightness to the optimal condition.	
	Auto White Balance	Regardless of outside light or color, the machine will adjust the color to the optimal condition.	
Control	Audio Out Volume	Use the left and right arrow keys to adjust the volume.	
	Mic Levels	Use the left and right arrow keys to adjust the volume.	
	Digital Zoom	Use the left and right arrow keys to turn on/off <b>digital zoom</b> .	
	Language	Switch to different languages. There are a total of 20 languages available for selection.	
	Lock Down	Set the lock down when the power is On.	
Advanced	Auto Erase	Set the stored images to be automatically deleted when Off is selected.	
	Preset Load	Read the value of the current image mode.	
	Preset Save	Store the value of the current image mode.	
	Splash Screen Settings	Launch [Splash Screen Settings] window.	
	Factory Reset	Resume the factory default setting to operate.	
	Firmware Version	Display FW version.	

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#### 6.2.3 Mask mode setting menu

Function Items	Function Descriptions
Live image	Press [ENTER] to return to live image.
Transparency	Use the left and right arrow keys to adjust the transparency of the mask.
Step	Use the left and right arrow keys to select the step of the mask.
V Size	Use the left and right arrow keys to select the vertical height of the mask.
H Size	Use the left and right arrow keys to select the horizontal length of the mask.
Exit	Press [ENTER] to confirm your selection and exit the mask mode setting menu.

#### 6.2.4 Spotlight mode setting menu

Function Items	Function Descriptions
Live image	Press [ENTER] to return to live image.
Shape	Use the left and right arrow keys to select the shape of the spotlight zone.
Transparency	Use the left and right arrow keys to adjust the transparency of the border in the spotlight mode.
Step	Use the left and right arrow keys to select the step of the spotlight zone.
V Size	Use the left and right arrow keys to adjust the height of the spotlight zone.
H Size	Use the left and right arrow keys to adjust the width of the spotlight zone.
Exit	Press [ENTER] to confirm your selection and exit the spotlight mode setting menu.

#### 6.2.5 Splash Setting Windows

Function Items	Function Descriptions
Power On Image Setting	Select to use default/custom power on image.
Power On Logo Show Time	Set the duration of displaying the power on logo that can be adjusted between 4 ~ 30 seconds.
Power On Image Select	Power On Image Select. ※ Only pictures in JPEG format are supported.
Exit	Press [ENTER] to confirm your selection and exit splash screen setting window.

#### **Lumens**<sup>®</sup> 6.2.6 Annotation Tools

After connecting the mouse via USB, right-click to activate the of drawing function of the setting menu

When the mouse stays at the right side of the screen, the mouse annotation menu can be activated

<Remark> You can only choose either USB screen or mouse annotation

When the mouse annotation function is selected, then remove the USB cable

To access the USB screen, please make sure that the mouse annotation function is not in use

lcon	Description	lcon	Description
	Custom tool 1	<b>/</b> 8	Clear all
2	Custom tool 2	<b>‡</b>	Open setting menu of the annotation tool
	Eraser	×	Exit the annotation tool

### **Lumens**<sup>®</sup> Chapter 7 Descriptions of Major Functions

- 7.1 I would like to automatically adjust the image to have the best brightness and focusing performance Use the Remote Control or Control Panel:
  - 1. Press [AUTO TUNE] for the best brightness and focusing performance.

#### 7.2 I would like to switch image sources

**Live image** is the default image source. Press [SOURCE] Source: on the **remote control or control panel** to have DC200 switch among the following images sources:

- 1. Live image (default).
- 2. HDMI IN.

[Remark] This image switch applies to HDMI OUT simultaneously.

#### 7.3 I would like to freeze images

1. Press [FREEZE] on the **remote control** or **control panel** to freeze the current image on the screen. Press again to defreeze.

# 7.4 I would like to rotate the image Remote control:

1. Press [ROTATE] key to rotate the screen. (The sequence is:

0°/180°/Vertical flip/Horizontal flip/90°/270°).

#### Control panel:

 Click [MENU] to access the setting menu and then select the [ROTATE] function. Adjust the rotation by pressing [▶] or [◄].

[Note] When the HDMI output is in 90°/270° mode, the USB screen displays as 0°, and PAN, PIP, recording function are not available.

#### **Lumens**<sup>®</sup> 7.5 I would like to record images

[Note] Connect USB disk to DC200 4K to start recording images.

7.5.1 Recording motion images

[Remark] You may not be able to capture or record images when [Capture Image] mode is set to [Disable].

#### Remote control:

- Press [RECORD] on the remote control to start recording images. Press [RECORD] again to stop.
- 2. Record sounds with the built-in microphone of the control panel

#### **Control panel:**

- 1. Press and hold [Capture] button for about 2 seconds to start recording. Press [Capture] again to stop.
- 7.5.2 Playing images
  - To play images, please refer to <u>7.13 I would like to view</u> captured/recorded images.

# 7.6 I would like to use the MASK and Spotlight function Remote control:

 Press [MASK] to activate the mask/spotlight mode menu in order to adjust function settings for Live, Transparency, Step, V Size, H Size

#### Control panel:

 Press [MENU] to access the setting menu and then select the [Mask] function in order to adjust function settings for Live, Transparency, Step, V Size, H Size

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# 7.7 I would like to compare images (compare live images with stored image files (PIP))

This function will compare and contrast a live image with a stored image.





#### **Remote control:**

- 1. Press [Playback] to access the Playback image thumbnails, and select the files to be compared
- 2. Press [PIP] to execute image comparison. Press the direction keys to move the live image
- 3. Repeat Steps 1 2 to change other image files

#### 7.8 I would like to change the power on image.

[Note] The power on image file must be less than 5 MB and in JPEG

format

[Note] To save the file, please follow the instruction below: File path: \DCIM\100MEDIA, for example: J:\DCIM\100MEDIA File name: four English letters+ four numbers, for example: LUMN0001.JPG

 Press [MENU] on the remote control or control panel to access the setting menu. To adjust settings, select [Settings] → [Advanced Settings] → [Splash Setting Windows]

### **Lumens**<sup>®</sup> Chapter 8 Connecting to Microscope

- 1 Mount the microscope adapter accessories onto the microscope [Note] Please choose an appropriate microscope adapter. Microscope adapter accessories are applicable to eyepieces of Ø28 mm.
- 2 The lens of DC200 connects with the microscope adapter



- 3 If the image is not clear
  - 3.1. Please adjust the focus of microscope.
  - 3.2. Please press the [FOCUS] button on either side of the DC200 lens to execute the auto focus.

# *Lumens*<sup>®</sup> Chapter 9 DIP Switch Setting

#### 1. Description of DIP

DIP	Function Descriptions
DIP 1 & DIP 2	Output Resolution
DIP3	OFF (Normal mode): 30 fps, applicable to general scene.
	ON (High-speed mode): 60 fps, applicable to support
	rapidly changing scene.
	(Only applicable to 1080P and 720P, but not 4K).
DIP4	OFF : 60Hz
	ON : 50Hz

#### 2. Resolution Switch



# *Lumens*<sup>®</sup> Chapter 10 Troubleshooting

This chapter describes problems you may encounter while using DC200. If you have questions, please refer to related chapters and follow all the suggested solutions. If the problem still occurred, please contact our distributors or service center.

No.	Problems	Solutions
1	Boot without power signal	Make sure you have plugged in the power cord.
2	There is no image output from DC200	<ol> <li>Check the power.</li> <li>Check all cable connections. Refer to <u>Chapter 4</u> <u>Installation and Connections</u> in this manual.</li> <li>Check the [Source], refer to <u>7.2 I would like to</u> <u>switch image sources of Chapter 7</u> <u>Descriptions of Major Functions</u>.</li> <li>Check the settings for the source of the projector. Please refer to the user manual of the projector.</li> <li>Check if DIP switch is properly set. Please refer to <u>Chapter 9 DIP Switch Setting</u> for related settings.</li> </ol>
3	Unable to focus The image is	Probably the document is too close. Press [ZOOM -] on the <b>remote control</b> or <b>control panel</b> . Or pull away the lens from the document to increase the distance, and then press the [FOCUS] button on the right side of the lens for auto focus. Check the Auto Image setting of your projector.
	incomplete	Please refer to the user manual of the projector or check for the DIP switch setting.
5	Lumens Document Camera, Ladibug™ and other applications cannot be used simultaneously When DC200 is turned on, the auxiliary floodlight	Lumens Document Camera, Ladibug <sup>™</sup> and other applications cannot be used simultaneously. Only one application can be executed at a time. Please close the currently running applications and then execute the application to be used. Please make sure the head lamp is set to [Off].
	do not light	

7	The data in the USB disk cannot be read	<ol> <li>The supported format of the disk is exFAT. It is recommended to use DC200 to format the disk before it is used.</li> </ol>	
		2. The USB disk with the capacity of 4 G and above is recommended (up to 256 G supported)	
		<ol> <li>Please make sure the file was saved at the specified path: \DCIM\100MEDIA. (E.g.: J:\DCIM\100MEDIA)</li> </ol>	
		<ol> <li>Please make sure the file is named appropriately, e.g. four English letters + four numbers. (E.g.: LUMN0001.JPG)</li> </ol>	
8	Fail to store images or react	<ol> <li>Check to see if the stored data have reached the maximum size of the USB disk (priority) or internal memory.</li> </ol>	
		2. Please make sure if the capture function is set to continuous mode or the time for capture is set to be long.	
9	The output image is	Press [AUTO TUNE] button to automatically adjust	
-	too bright, too dark,	the image to have the best brightness and focusing	
	or vague	nerformance	
10	Unable to record images	1 Check to see if the stored data have reached the	
10		maximum size of the USB disk	
	-	2 The recording function is not supported in the	
		internal memory. Please make sure that USB	
		disk is inserted for image recording	
11	The operating steps	The operating steps in the manual may be not	
••	in the manual are	applicable to the machine due to improvement in	
	not applicable to the machine	functions. Check to see if the Firmware version of	
		vour machine is up-to-date.	
		Please go to Lumens official website to check	
		whether the latest version is available for update.	
		https://www.mylumens.com/support	
12	How to unlock the	Press [MENU] to access the setting menu $\rightarrow$	
	locked device	$[Settings] \rightarrow [Advanced Settings] \rightarrow [Lock Down] \rightarrow$	
		select [OFF] to disable the lock down function when	

the power is On.

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### **Lumens**<sup>®</sup> Supplier's Declaration of Conformity 47 CFR § 2.1077 Compliance Information

Manufacturer : Lumens Digital Optics Inc.

Product Name : DC200

Model Number : 4K Document Camera

#### **Responsible Party – U.S. Contact Information**

Supplier : Lumens Integration, Inc.

4116 Clipper Court, Fremont, CA 94538, United States

e-mail : support@mylumens.com

#### **FCC Compliance Statement**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions : (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.