

# VC-B20D HD Camera

## Installation Guide - English



### [Important]

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# Copyright Information

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# Chapter 1 Safety Instructions

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





1. Use attachments only as recommended.
2. Use the type of power source indicated on the HD Camera. If you are not sure of the type of power available, consult your dealer or local electricity company for advice.
3. 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.
4. Do not overload wall sockets, extension cords or multi-way plug boards as this may cause fire or electric shock.
5. Do not place the HD Camera where the cord can be stepped on as this may result in fraying or damage to the lead or the plug.
6. Do not block slots and openings in the HD Camera case as poor ventilation may lead to overheated HD Camera. Do not place the HD Camera on a sofa, rug or other soft surface.
7. Never push objects of any kind through cabinet slots. Never allow liquid of any kind to spill into the HD Camera.
8. Except as specifically instructed in this User Manual, do not attempt to operate this product by yourself. Opening or removing covers may expose you to dangerous voltages and other hazards. Refer all servicing to licensed service personnel.
9. Unplug the HD Camera during thunderstorms or if it is not going to be used for an extended period. Do not place the HD Camera or remote control on top of vibrating equipment or heated objects such as a car, etc.
10. Unplug the HD Camera from the wall outlet and refer servicing to licensed service personnel when the following situations happen:
  - If the power cord or plug becomes damaged or frayed.
  - If liquid is spilled into the HD Camera or the HD Camera has been exposed to rain or water.

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

## ■ Precautions

**Warning:** To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.

If HD Camera will not be used for an extended time, unplug it from the power socket.

		<table><tr><td colspan="2">Note</td></tr><tr><td colspan="2">Risk of Electric Shock Please do not open it by yourself.</td></tr></table>		Note		Risk of Electric Shock Please do not open it by yourself.			
Note									
Risk of Electric Shock Please do not open it by yourself.									
Caution: To reduce the risk of electric shock, do not remove cover (or back). No user-serviceable parts inside. Refer servicing to licensed service personnel.									
		This symbol indicates that this equipment may contain dangerous voltage which could cause electric shock.							
				This symbol indicates that there are important operating and maintenance instructions in this User Manual with this unit.					

## ■ FCC Warning

This HD Camera 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 residential installation.

## ■ EN55022 (CE Radiation) Warning

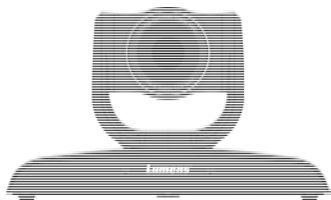
This product is intended for use in a commercial, industrial, or educational environment. It is not intended for residential use.

This is a Class A product. In a residential environment it may cause radio interference, in which case the user may be required to take adequate measures. The typical use is in a conference room, reception room or hall.

# Chapter 2 Package Contents

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VC-B20D



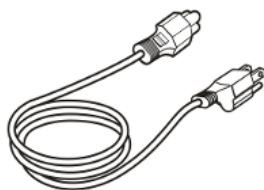
Instruction for  
installation



Remote control

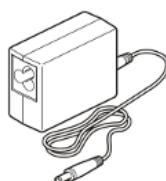


Power cord



Appearance may vary  
depending on country/region

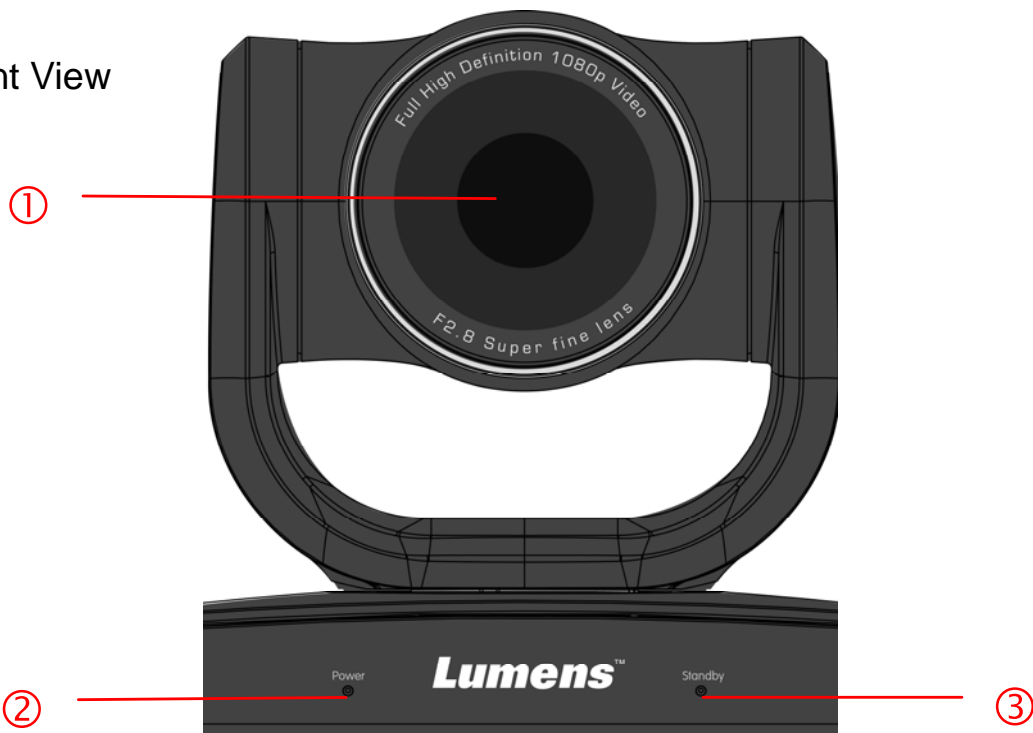
Power Adapter



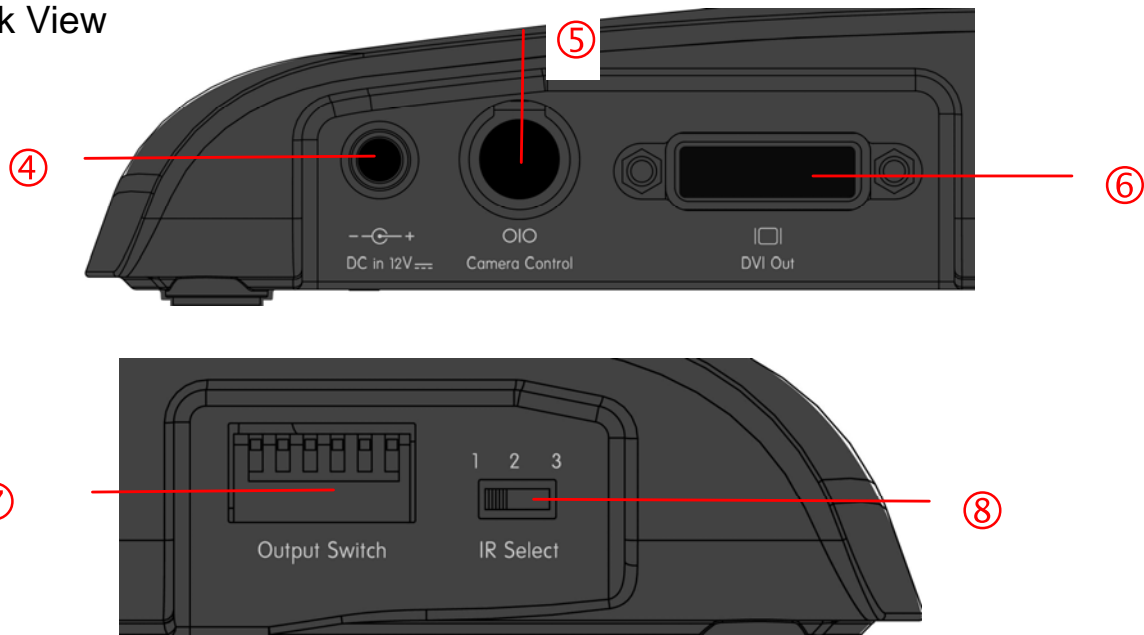
# Chapter 3 Product Overview

## 3.1 Overview

Front View



Back View



1. Camera lens	2. Power LED indicator
3. Standby LED indicator	4. Power input
5. Camera Control(RS232 IN)	6. DVI-I output
7. Output Switch	8. IR Select



## **3.2 Description of LED indicator**

### **3.2.1 Power :**

3.2.1.1 No light: Power off

3.2.1.2 Green light: In use

3.2.1.3 Flickering green: Signal from the remote control is received; the indicator flickers every 0.5 second

### **3.2.2 Standby :**

3.2.2.1 Orange: In standby mode

3.2.2.2 No light: Power on

# Chapter 4 Instruction for installation

---

## 4.1 Preparation before installation

Installation and connection of HD camera requires special skills. To install by yourself, please follow necessary steps, ensure steady and tight installation of the device, and pay attention to your safety to avoid any accident.

**4.1.1 Ensure the safety of the installation environment. Please do not install the device on unstable ceiling or in a place where the device is in danger of falling to avoid any accident.**

**4.1.2 Please check whether accessories in the box are complete or not. Please contact the supplier for any shortage, and make sure to keep the accessories in the box intact.**

**4.1.3 Please choose a proper place for installation of camera in advance. Please determine an installation place according to the following requirements.**

4.1.1.1 Confirm the position for the object to be captured.

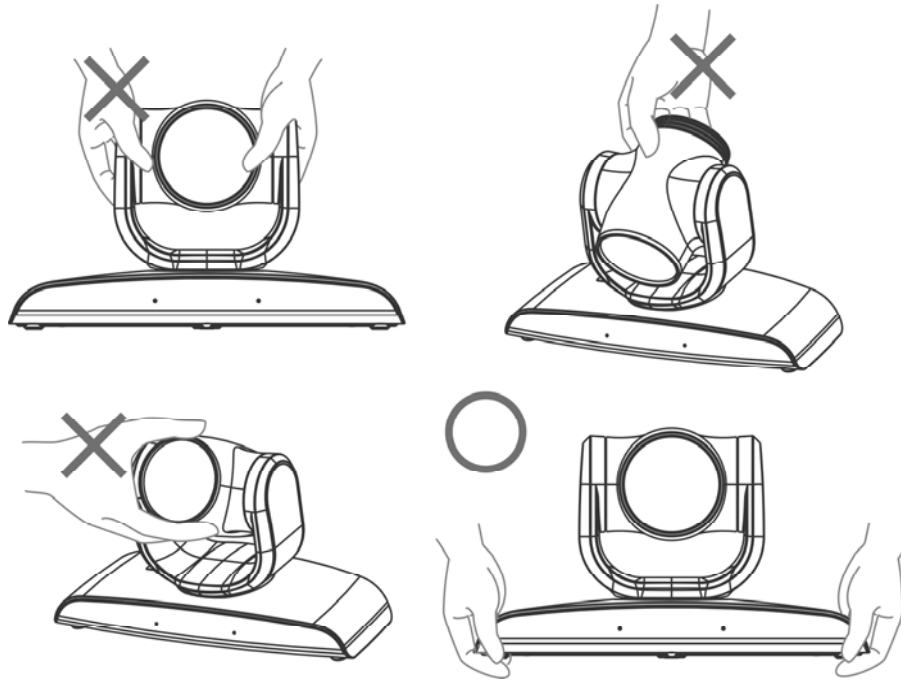
4.1.1.2 Confirm whether the camera is set at a proper distance from other light sources.

## 4.2 Instruction for installation

**4.2.1 I would like to install camera on the desk**

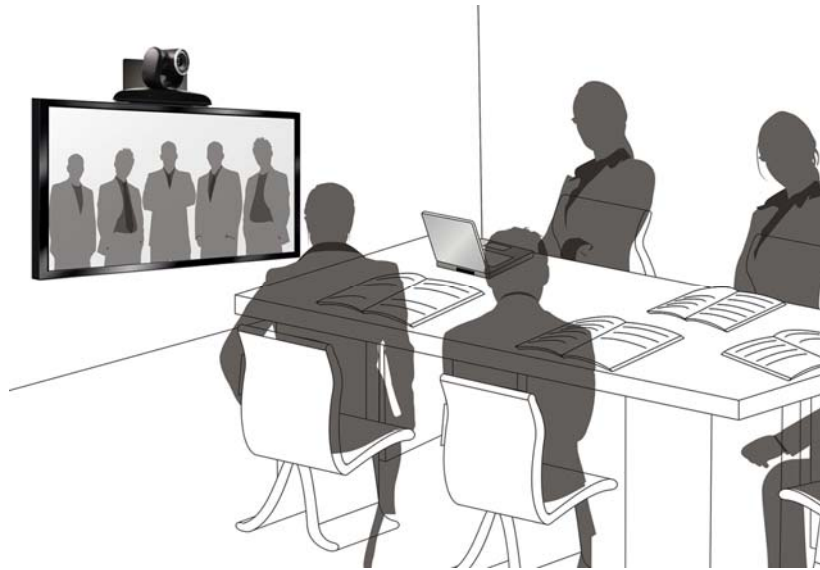
**4.2.1.1 Precautions for installation**

- ◆ Please install the machine on a flat desk
- ◆ Do not grab the camera head by hand when handling the device
- ◆ Do not rotate the camera head by hand. Improper rotation may result in breakdown of the camera



#### 4.2.1.2 Installation steps

1. Install the camera on the wall with VC-AC03

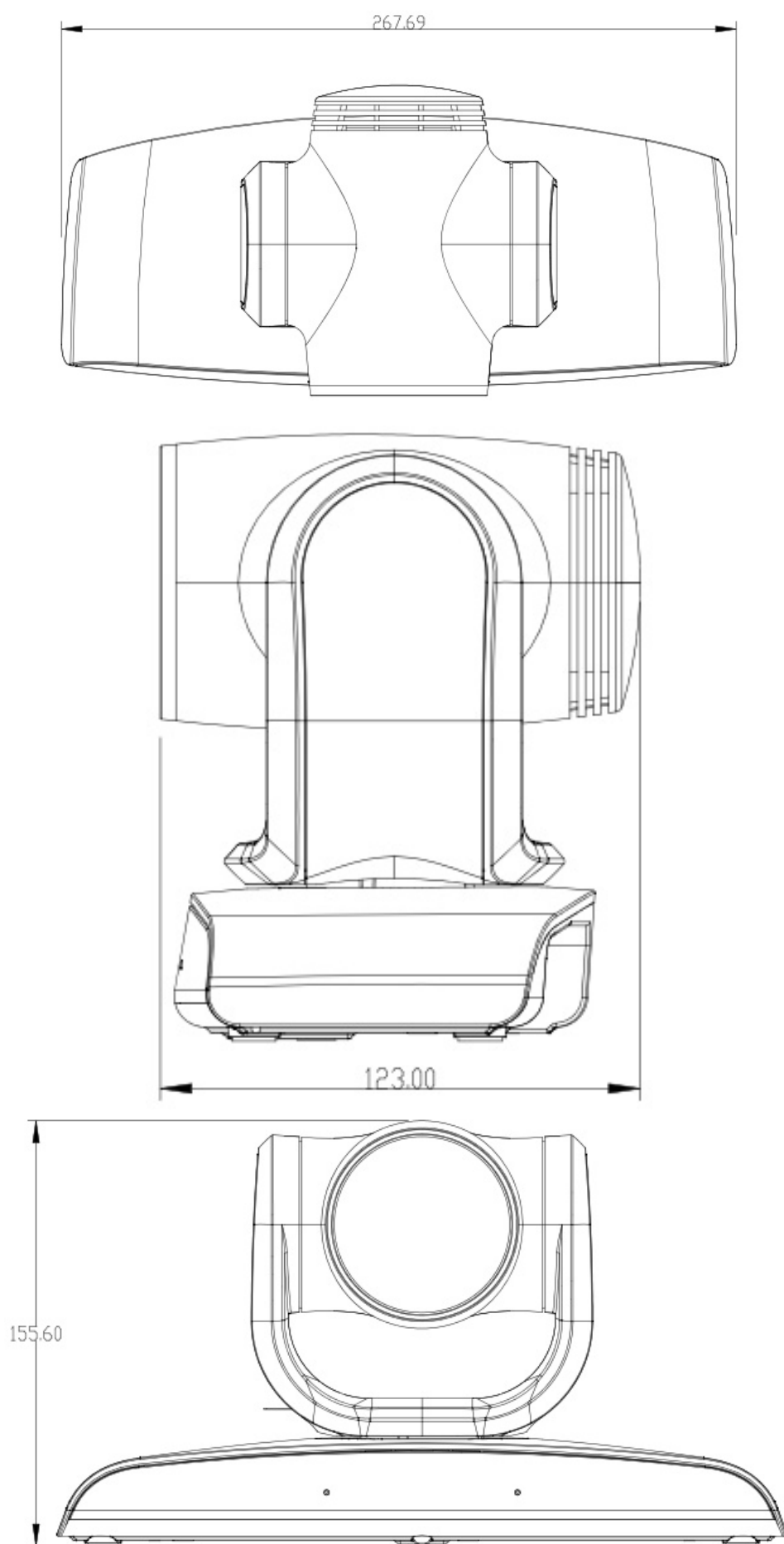


<Remark> For the installation of VC-AC03, please refer to [VC-AC03 Quick Installation Guide](#)

#### 4.2.1.3 Camera Size

Length x Width x Height : 267.69 x 123 x 155.60 mm

Weight : 1.3 Kg



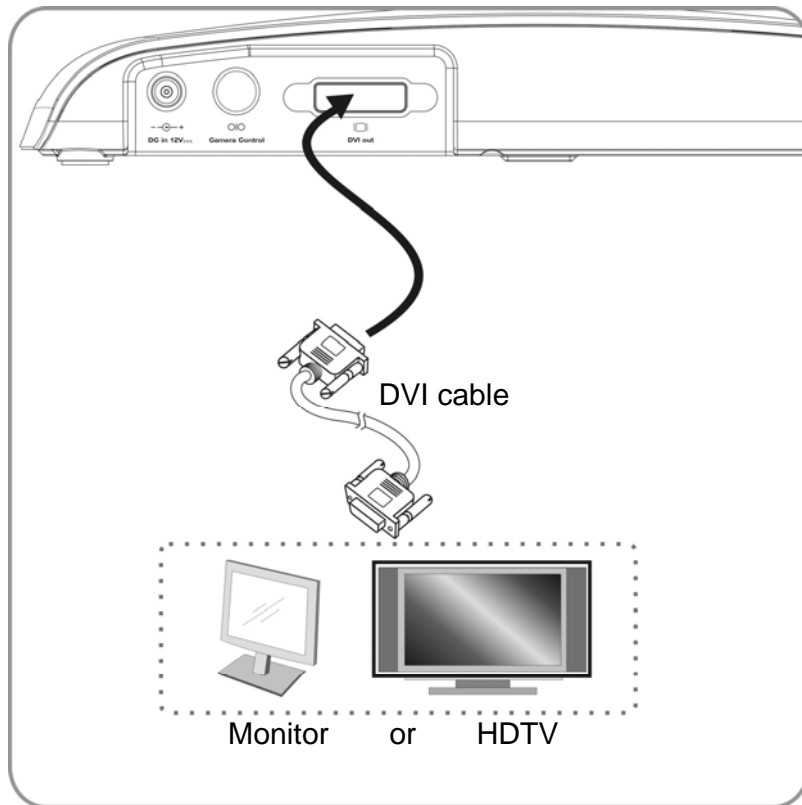
#### **4.2.1.4 Precautions for installation**

1. Before installation, please confirm the orientation of the machine relative to the object to be captured
2. It is recommended that the machine should be set at a distance of more than 1 meter away from the object to be captured. Please adjust for a best distance according to the magnification of the lens

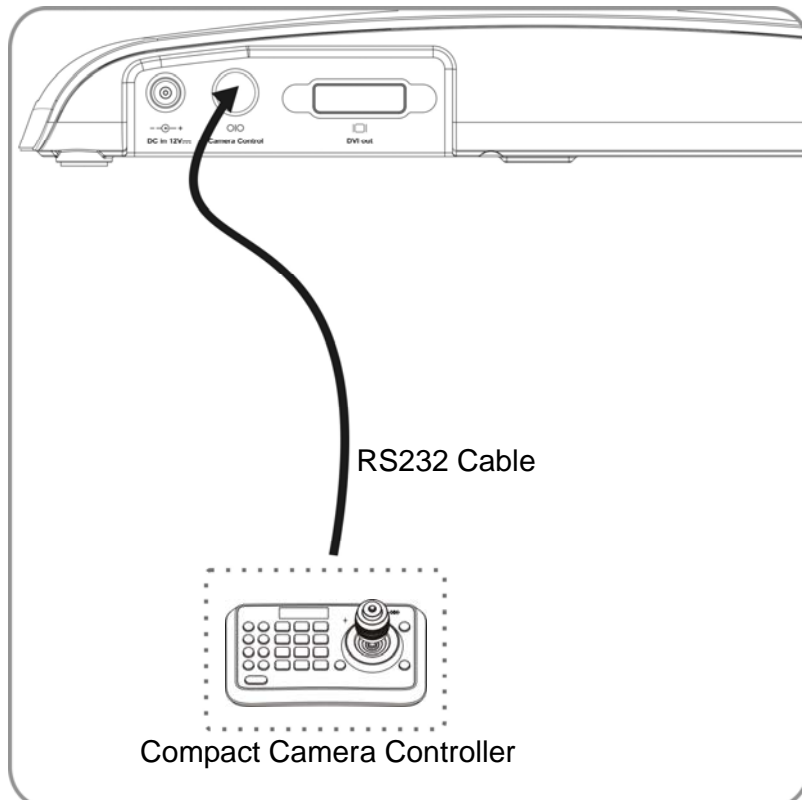
## 4.3 Connecting the device

### 4.3.1 Image output

#### 4.3.1.1 Connecting to a HDTV/computer monitor (DVI)



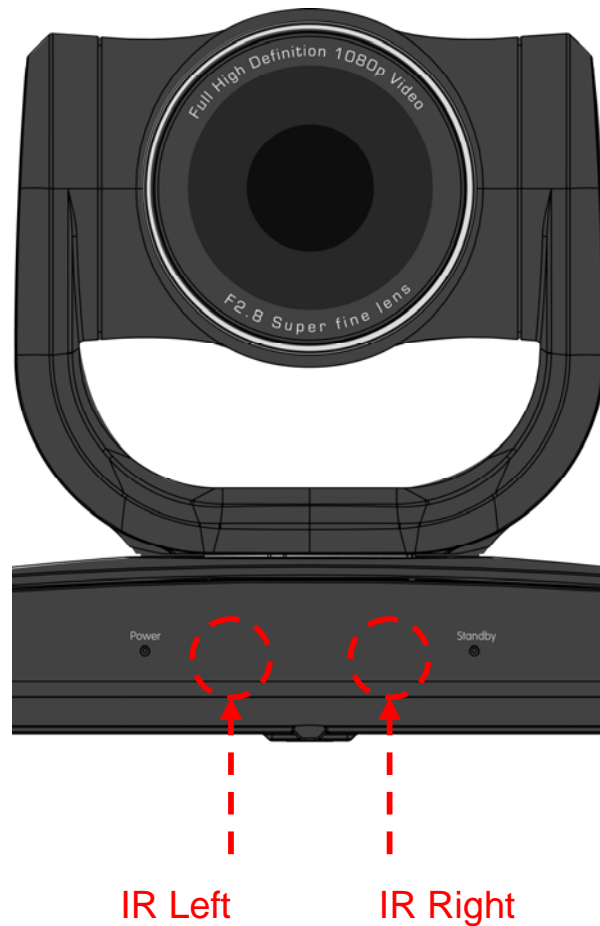
### 4.3.2 Use control panel to control the Camera



### 4.3.3 IR Out

IR Out includes IR Right and IR Left, use VISCA command to switch:

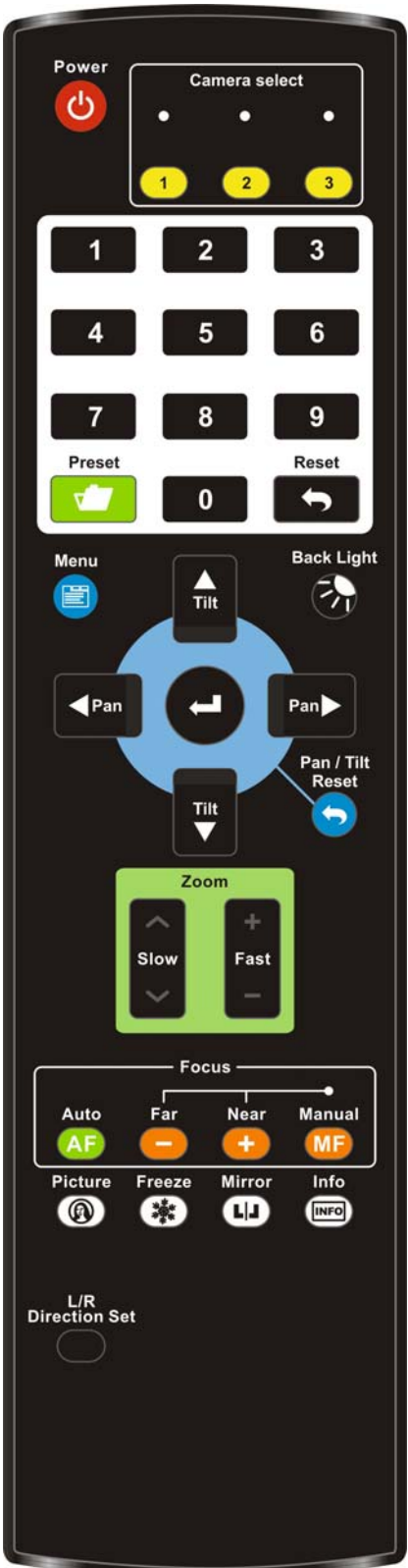
1. IR right and IR left ON
2. IR left OFF, IR right ON
3. IR left ON, IR right OFF
4. NA (no signal from IR receiver)



# Chapter 5 Setting Menu Description

## 5.1 Functions of remote control

<Remark> The below functions are listed alphabetically.

	Item	Description
	◀, ▶, ▲, ▼	Move the lens
	Back Light	Turn on/off back light compensation
	Camera select	Select 1 ~ 3 VC
	Focus-Manual / Far/Near	Turn on manual focus to adjust the focal length
	Focus-Auto	Auto focus
	Freeze	Freeze the screen
	Home-Enter	Go back to the main page / Execute
	Info	Status information
	L/R Direction Set	L/R Direction / Normal
	Menu	Display OSD menu
	Mirror	Rotate the image (OFF / Mirror / Flip / Mirror + Flip)
	Pan/Tilt Reset	Clear the Pan / Tilt setting
	Picture	Switch image effect (Disable / Film / Black&White)
	Power	Power switch
	Preset	Appoint an ID (0 ~ 9) to save the current position data
	Reset	Appoint an ID (0 ~ 9) to delete the current position data
	Zoom-Fast	Adjust image size
	Zoom-Slow	Fine-tune image size



## 5.2 Setting menu

<Remark>The **bold underlined** values in the following table are defaults.

1st Level Major Items	2nd Level Minor Items	3rd Level Adjustment Values		Function Descriptions
Exposure	Mode	1. <b><u>Full Auto</u></b> 2. Shutter Pri 3. Iris Pri 4. Manual 5. White Board		Exposure mode setting
	Exposure_Comp.	On/ <b><u>Off</u></b>		AE Level
	Exposure_Comp. Level	-6~ <b><u>0</u></b> ~4		The value can be adjusted only after <b>Exposure_Comp.</b> is activated
	Spot Light	On/ <b><u>Off</u></b>		The value can be adjusted when the mode is set to <b>Full Auto</b> or <b>Shutter Pri</b>
	Spot Light Position	X(0~8)Y(0~6)		The value can be adjusted only after <b>Spot Light</b> is activated
	Shutter Pri	60/30 mode	50/25 mode	Shutter priority setting
		1/10000	1/10000	
		1/5000	1/5000	
		1/3000	1/3000	
		1/2500	1/2500	
		1/2000	1/1750	
		1/1500	1/1250	
		1/1000	1/1000	
		1/725	1/600	
		1/500	1/425	
		1/350	1/300	

		1/250	1/215	
		1/180	1/150	
		1/120	1/120	
		1/100	1/100	
		1/90	1/75	
		<b><u>1/60</u></b>	<b><u>1/50</u></b>	
		1/30	1/25	
		1/15	1/12	
		1/8	1/6	
		1/4	1/3	
		1/2	1/2	
		1/1	1/1	
	<b>Iris Pri</b>	1. <b><u>F2.8</u></b> 2. F4 3. F5.6 4. F8 5. F11 6. F16		IRIS priority setting
	<b>Manual Gain</b>	1. <b><u>0dB</u></b> 2. 2 dB 3. 4 dB 4. 6 dB 5. 8 dB 6. 10 dB 7. 12 dB 8. 14 dB 9. 16 dB 10. 18 dB 11. 20 dB 12. 22 dB 13. 24 dB 14. 26 dB 15. 28 dB 16. 30 dB		Manually set the gain

	<b>Manual Speed</b>	60/30 mode	50/25 mode	Manually set the shutter
		1/10000	1/10000	
		1/5000	1/5000	
		1/3000	1/3000	
		1/2500	1/2500	
		1/2000	1/1750	
		1/1500	1/1250	
		1/1000	1/1000	
		1/725	1/600	
		1/500	1/425	
		1/350	1/300	
		1/250	1/215	
		1/180	1/150	
		1/120	1/120	
		1/100	1/100	
		1/90	1/75	
		<b><u>1/60</u></b>	<b><u>1/50</u></b>	
		1/30	1/25	
		1/15	1/12	
		1/8	1/6	
		1/4	1/3	
		1/2	1/2	
		1/1	1/1	
	<b>Manual Iris</b>	1. <b><u>F2.8</u></b> 2. F4 3. F5.6 4. F8 5. F11 6. F16		Manually set the IRIS

	<b>Gain Limit</b>	1. 8 dB 2. 10 dB 3. 12 dB 4. 14 dB 5. 16 dB 6. 18 dB 7. 20 dB 8. 22dB 9. 24dB 10. 26 dB 11. 28 dB 12. <b><u>30dB</u></b>	Max. limit value of electron gain
	<b>WDR</b>	1. <b><u>Off</u></b> 2. 1 3. 2 4. 3 5. 4 6. 5	WDR settings
<b>White Balance</b>	<b>Mode</b>	1. <b><u>Auto</u></b> 2. Indoor 3. Outdoor 4. One Push WB 5. ATW 6. Manual 7. 3000K 8. 4300K 9. 5000K 10. 6500K 11. 8300K 12. Wide Auto 13. Sodium Lamp	Select the color temperature mode
	<b>One Push Trigger</b>	<b><u>ENTER</u></b>	One push trigger
	<b>Manual B Gain</b>	0~ <b><u>C</u></b> ~60	Adjustable when the white balance mode is set to <b>Manual</b>

	<b>Manual R Gain</b>	0~ <u>C</u> ~60	Adjustable when the white balance mode is set to <b>Manual</b>
<b>Picture</b>	<b>Picture effect</b>	1. <u>Off</u> 2. Neg 3. B&W	Set the picture effect
	<b>Sharpness</b>	1~ <u>A</u> ~16	Adjust the <b>sharpness</b> of the image
	<b>2D NR</b>	1. <u>Auto</u> 2. Off 3. 1 4. 2 5. 3 6. 4 7. 5	2D noise reduction settings
	<b>3D NR</b>	1. Off 2. <u>Low</u> 3. Typ 4. Max 5. Auto	3D dynamic noise reduction settings
	<b>Image Mode</b>	1. Mode1 2. Mode2 3. Mode3 4. Mode4 5. <u>Mode5</u> 6. Mode6 7. Custom	The user may customize his/her desired image mode
	<b>Image Mode Load</b>	1. <u>Mode1</u> 2. Mode2 3. Mode3 4. Mode4 5. Mode5 6. Mode6	Adjustable when the <b>image mode</b> is set to <b>Custom</b> . After selected, the corresponding <b>image mode</b> parameters will be read and applied to <b>Custom</b>
	<b>Saturation</b>	0~ <u>A</u> ~25	Adjustable in the <b>Custom Mode</b>
	<b>Hue</b>	0~ <u>A</u> ~14	Adjustable in the <b>Custom Mode</b>

	<b>Gamma</b>	0~ <u>A</u> ~3	Adjustable in the <b>Custom Mode</b>
	<b>Skin Tone</b>	1~ <u>A</u> ~5	Skin tone setting, adjustable in the <b>Custom Mode</b>
	<b>Brightness</b>	0~ <u>A</u> ~14	Adjustable in the <b>Custom Mode</b>
	<b>Contrast</b>	0~ <u>A</u> ~14	Contrast adjustment, adjustable in the <b>Custom Mode</b>
	<b>Black Level</b>	1. <u>Off</u> 2. Type 1 3. Type 2 4. Type 3	Shadow details and transparency adjustment, adjustable in the <b>Custom Mode</b>
<b>Pan Tilt Zoom</b>	<b>Pan/Tilt Limit</b>	On/ <u>Off</u>	Turn on/off the angle limit setting
	<b>Pan Right Limit</b>	0~ <u>100</u>	Limit the right angle
	<b>Pan Left Limit</b>	<u>-100</u> ~0	Limit the left angle
	<b>Tilt UP Limit</b>	0~ <u>30</u>	Limit the upward angle
	<b>Tilt Down Limit)</b>	<u>-30</u> ~0	Limit the downward angle
	<b>D-Zoom Limit</b>	<u>x1</u> ~x12	Limit the D-zoom multiple
<b>D-effect</b>	<b>Mirror</b>	1. <u>Off</u> 2. Mirror 3. Flip 4. Mirror + Flip	Set the mode at which the image is turned
<b>Auto Focus</b>	<b>AF Sensitivity</b>	1. Low 2. <u>Middle</u> 3. High	Select the AF triggering speed. The higher the speed is, the faster AF is triggered
	<b>AF speed</b>	Fast / <u>Normal</u>	Focus speed after AF triggering

	<b>AF Frame</b>	<b><u>Full Frame</u></b> / Center	AF frame setting, when central area was set as AF frame, focusing will be on the center of the screen. When full area was set as AF frame, focusing will be calculated based on the full screen.
<b>System</b>	<b>Prompt</b>	On/ <b><u>Off</u></b>	Turn on/off the prompt information on the display
	<b>IR Receive</b>	<b><u>On</u></b> /Off	Turn on/off the infrared reception
	<b>Language</b>	<b><u>English</u></b> / Chinese	Language
	<b>Factory Reset</b>	On/ <b><u>Off</u></b>	Resume the factory default setting
<b>Status</b>			Display the current setting status

# Chapter 6 Descriptions of Major Functions

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## 6.1 I would like to switch to VC-B20D

1. Press **[Camera 1 ~ 3]** on the **remote control** to select VC-B20D.
- **Camera 1 ~ 3 is selected with IR SELECT.**

## 6.2 I would like to save the current lens position data

1. Hold **[Preset + ID]** on the **remote control** to save the current position data.
- **ID shall be a digit [0 ~ 9].**
  - **Use VISCA command to store position data to [0 ~ 127]**

## 6.3 I would like to clear the saved position data

1. Hold **[Reset + ID]** on the **remote control** to clear the given position data.
- **ID shall be a digit [0 ~ 9].**
  - **Use VISCA command to clear position data stored in [0 ~ 127]**

## 6.4 I would like to turn on the back light compensation function

1. Press **[Back Light]** on the **remote control** to turn on or turn off the back light compensation

## 6.5 I would like to adjust the shooting angle of the lens

1. Press **[Tilt ▲]** or **[Tilt ▼]** on the **remote control** to adjust the angle upward or downward.
2. Press **[Pan ►]** or **[Pan ◄]** on the **remote control** to adjust the angle to right or left.
3. Press **[Pan - Tilt Reset]** on the **remote control** to reset the angle to the center point.

## 6.6 I would like to zoom in/out images

### 6.6.1 Adjust image size

1. Press **[Fast +]** on the **remote control** to zoom in images.



2. Press [**Fast -**] on the **remote control** to zoom out images.

### 6.6.2 Fine-tune image size

1. Press [**Slow +**] on the **remote control** to zoom in images.
2. Press [**Slow -**] on the **remote control** to zoom out images.

## 6.7 I would like to adjust the focal length

### 6.7.1 Auto tune

1. Press [**AF**] on the **remote control** to adjust automatically.

### 6.7.2 Manual focus

1. Press [**MF**] on the **remote control** to turn on the manual focus function.
2. Press **Focus - [+]** or **Focus - [-]** to adjust.

## 6.8 I would like to adjust the AF speed

### 6.8.1 Adjust the AF Sensitivity

Triggering speed of focus. The higher the speed is, the faster focus is triggered.

To shoot fast-moving objects, **AF Sensitivity** can be set to [**High**] or [**Medium**], which is applicable to quick focus.

When the environment is too dark to enable auto focus or fixed objects have to be shot in different brightness, **AF Sensitivity** can be set to [**Low**].

1. Press [MENU] to activate the setting menu.
2. Press [▶] or [◀] to select [Auto Focus].
3. Press [ENTER] to activate.
4. Press [▲] or [▼] to select [AF sensitivity].
5. Press [ENTER] to activate.
6. Press [▶] or [◀] to select [High / middle / Low].
7. Press [MENU] to exit.

### 6.8.2 Adjust the AF speed

The focus speed upon triggering **AF Sensitivity**

- **[Normal]** (default): Image flickering may not occur
  - **[Fast]**: Fast focus speed
1. Press [MENU] to activate the setting menu.
  2. Press [▶] or [◀] to select [Auto Focus].
  3. Press [ENTER] to activate.
  4. Press [▲] or [▼] to select [AF Speed].
  5. Press [ENTER] to activate.
  6. Press [▶] or [◀] to select [Fast / Normal].
  7. Press [MENU] to exit.

## 6.9 I would like to set the image mode

1. Press **[Picture]** on the **remote control** to switch [Off / Neg / B&W].

## 6.10 I would like to freeze images

1. Press **[Freeze]** on the **remote control** to freeze the current image on the display.

## 6.11 I would like to rotate the image

1. Press **[Mirror]** on the **remote control** to switch [Off / Mirror / Filp / Filp+Miorror].

## 6.12 I would like to change the camera direction

1. Press **[L/R Direction Set]** on the **remote control** to switch [L/R Direction / Normal].

## 6.13 I would like to display the current status

1. Press **[Info]** on the **remote control** to display the current status information.

# Chapter 7 DIP switch setting

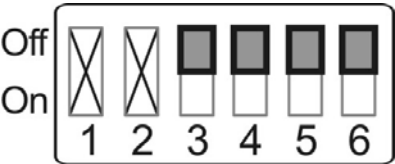
<Note> Please turn off the machine before changing DIP switch setting.

## 7.1 DIP SWITCH

### 7.1.1 OUTPUT Switch-----1、2Pin

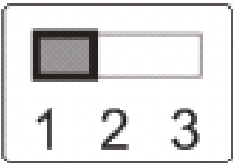
	Setting	Function Descriptions
	DIP 1	Infrared signal output switch OFF: Enable   ON : Disable
	DIP 2	Communication baud rate selector OFF: 9600 / ON : 38400

### 7.1.2 OUTPUT Switch-----3~6Pin



Output Mode	Setting	Output Mode	Setting
1920x1080/60p		1920x1080/50p	
1920x1080/30p		1920x1080/25p	
1920x1080/60i		1920x1080/50i	
1280x720/60p		1280x720/50p	
1280x720/30p		1280x720/25p	

7.1.3 IR SELECT



ID	Setting
1	
2	
3	

# Chapter 8 Troubleshooting

This chapter describes problems you may encounter while using VC-B20D. 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.	<b>Boot without power signal</b>	1. Make sure you have plugged in the power cord.
2.	<b>There is no image output from VC-B20D</b>	1. Check the power. 2. Check if DIP switch is properly set. Please refer to <a href="#">Chapter 7 DIP Switch Setting</a> for related settings. 3. Make sure the display supports the output resolution; in general, the resolution is 1080p60/1080i60/720p60. 4. Replace the cables and make sure they are not faulty.
3.	<b>VC-B20D image is severely delayed</b>	Please use 1080p or 720p 60/50 Hz signals rather than 25/30 Hz signals.
4.	<b>Not working after changes to DIP Switch setting</b>	After completing DIP Switch setting, unplug and reconnect the power cord and turn on the machine to change the setting.
5.	<b>VC-B20D cannot be operated by remote control</b>	1. Please confirm if the Camera Select on the remote control can be used together with the IR Select on VC-B20D. 2. Please prevent VC-B20D from direct sunshine. 3. Make sure the energy-saving bulb and the IR touch screen are as far as possible in order to avoid interference. 4. When several VC-B20D are connected in the same area, the operation of two remote controls at the same time may result in signal interference. It is recommended to use one remote control only.
6.	<b>The device cannot be controlled with Codec</b>	1. Please consult the distributor to make sure the firmware version is the latest one. The steps to check version is as follows: 1.1 Press [MENU] on the remote control 1.2 Choose [Status] 1.3 Go to Page 5 of [System] 1.4 Make sure the firmware version is correct.



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