

VC-B20D HD Camera

Installation Guide - English



[Important]

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Chapter 1 Safety Instructions

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

1 Operation

- 1.1 Please use the product in the recommended operating environment.
- 1.2 Do not place the 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 PTZ Video Camera. 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 as this may cause fire or electric shock.
- 1.9 Do not block the slots and openings in the case of PTZ Video Camera. They provide ventilation and prevent the PTZ Video Camera from overheating.
- 1.10 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.
- 1.11 Unplug the PTZ Video Camera 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 Never push objects of any kind through cabinet slots. Never allow liquid of any kind to spill into the Product.
- 3.3 Unplug this product during thunderstorms or if it is not going to be used for an extended period.
- 3.4 Do not place this product or accessories on top of vibrating equipment or heated objects.

4 Cleaning

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





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

- 5.1 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 PTZ Video Camera will not be used for an extended time, unplug it from the power socket.

	<table border="1"> <tr> <td style="text-align: center;">Note</td> </tr> <tr> <td style="text-align: center;">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				
<p>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.</p>				
	<p>This symbol indicates that this equipment may contain dangerous voltage which could cause electric shock.</p>			
		<p>This symbol indicates that there are important operating and maintenance instructions in this User Manual with this unit.</p>		

■ FCC Warning

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

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 numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe A prescrites dans la norme sur le matériel brouilleur: "Appareils Numériques," NMB-003 édictée par l'Industrie.

■ EN55032 (CE Radiation) Warning

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

Chapter 2 Package Contents

VC-B20D



Instruction for
installation



Remote control

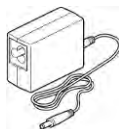


Power cord



Appearance may vary
depending on country/region

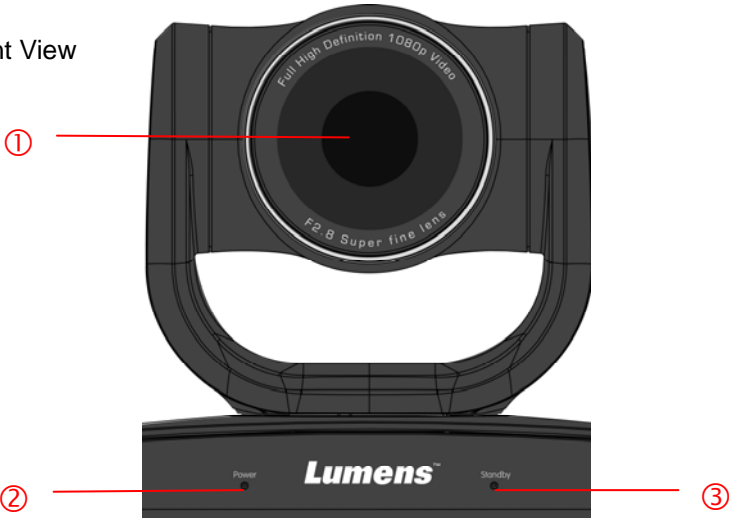
Power Adapter



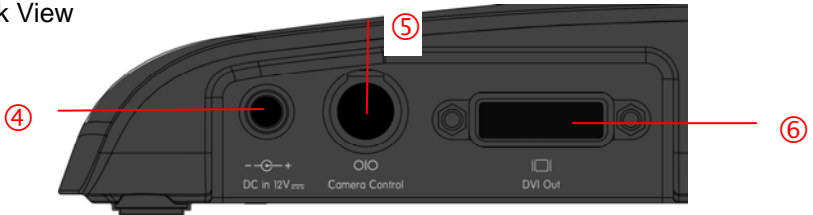
Chapter 3 Product Overview

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

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.

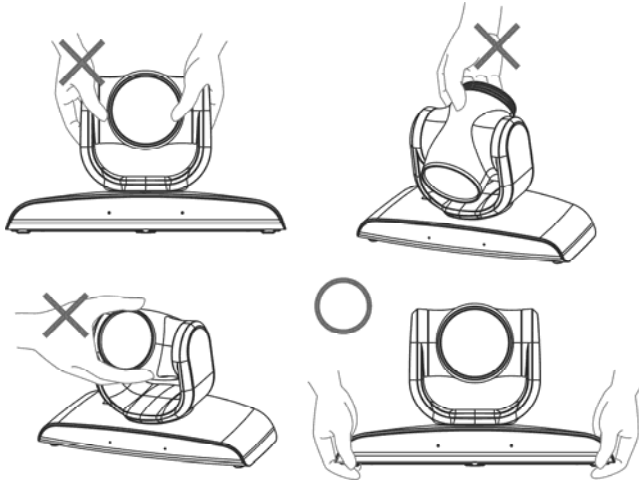
4.1.1.2 Confirm whether the camera is set at a proper distance from other light sources.

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

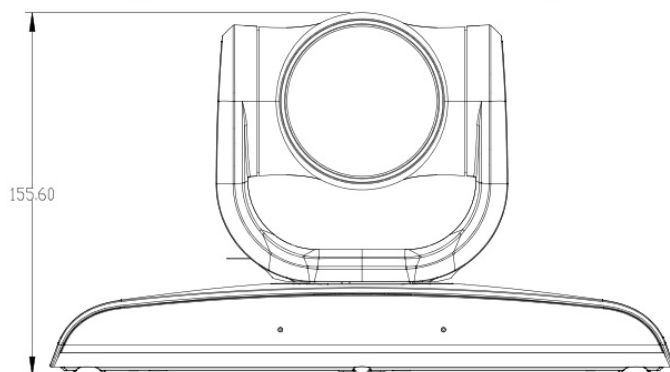
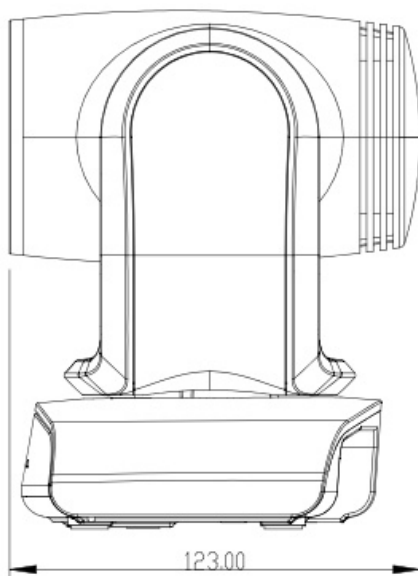
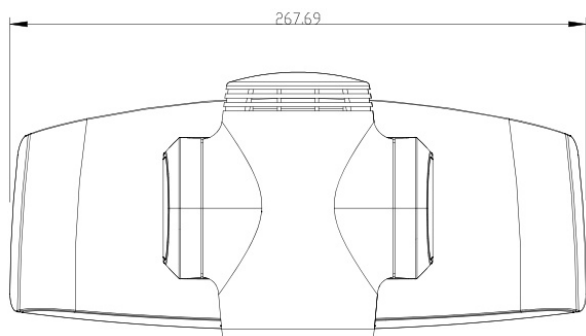


<Remark> For the installation of VC-AC03, please refer to [VC-AC03 Quick Installation Guide](#)

4.2.1.3 Camera Size

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

Weight : 1.3 Kg



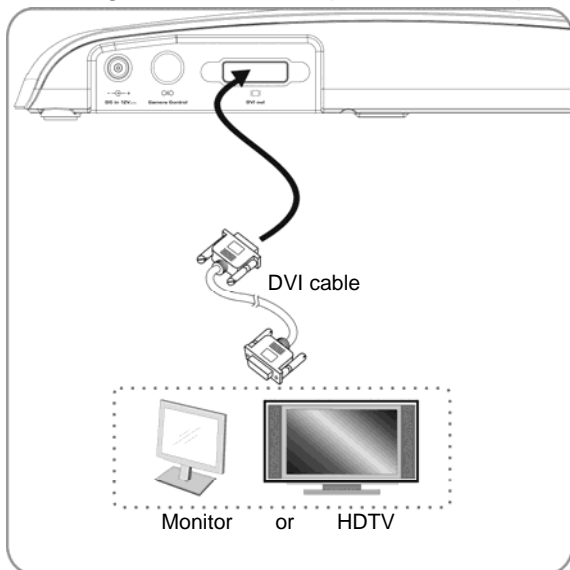
4.2.1.4 Precautions for installation

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

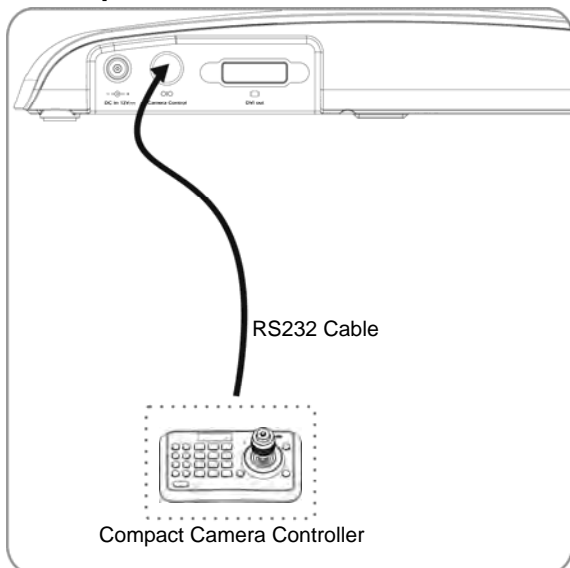
4.3 Connecting the device

4.3.1 Image output

4.3.1.1 Connecting to a HDTV/computer monitor (DVI)



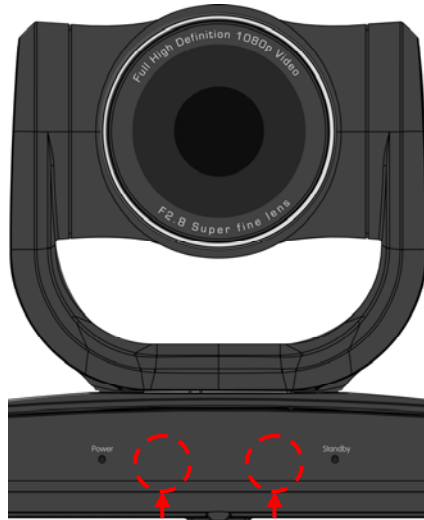
4.3.2 Use control panel to control the Camera



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)




IR Left

IR Right

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. <u>Full Auto</u> 2. Shutter Pri 3. Iris Pri 4. Manual 5. White Board		Exposure mode setting	
	Exposure Comp.	On/ <u>Off</u>		AE Level	
	Exposure Comp. Level	-6~ <u>0</u> ~4		The value can be adjusted only after Exposure Comp. is activated	
	Spot Light	On/ <u>Off</u>		The value can be adjusted when the mode is set to Full Auto or Shutter Pri	
	Spot Light Position	X(0~8)Y(0~6)		The value can be adjusted only after Spot Light 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	
		<u>1/60</u>	<u>1/50</u>	
		1/30	1/25	
		1/15	1/12	
		1/8	1/6	
		1/4	1/3	
		1/2	1/2	
		1/1	1/1	
	Iris Pri	<ol style="list-style-type: none"> 1. <u>F2.8</u> 2. F4 3. F5.6 4. F8 5. F11 6. F16 		IRIS priority setting
	Manual Gain	<ol style="list-style-type: none"> 1. <u>0dB</u> 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

	Manual Speed	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	
		<u>1/60</u>	<u>1/50</u>	
		1/30	1/25	
		1/15	1/12	
		1/8	1/6	
		1/4	1/3	
		1/2	1/2	
1/1	1/1			
	Manual Iris	<ol style="list-style-type: none"> 1. <u>F2.8</u> 2. F4 3. F5.6 4. F8 5. F11 6. F16 	Manually set the IRIS	

	Gain Limit	<ol style="list-style-type: none"> 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. <u>30dB</u> 	Max. limit value of electron gain
	WDR	<ol style="list-style-type: none"> 1. <u>Off</u> 2. 1 3. 2 4. 3 5. 4 6. 5 	WDR settings
White Balance	Mode	<ol style="list-style-type: none"> 1. <u>Auto</u> 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
	One Push Trigger	<u>ENTER</u>	One push trigger
	Manual B Gain	0~ <u>C</u> ~60	Adjustable when the white balance mode is set to Manual

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

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

	AF Frame	Full Frame / 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.
System	Prompt	On/ Off	Turn on/off the prompt information on the display
	IR Receive	On /Off	Turn on/off the infrared reception
	Output Mode	1920x1080/60p	Set output resolution
		1920x1080/50p	
		1920x1080/30p	
		1920x1080/25p	
		1280x720/60p	
		1280x720/50p	
		1280x720/30p	
Factory Reset	On/ Off	Resume the factory default setting	
Status		Display the current setting status	

Chapter 6 Descriptions of Major Functions

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 change the output resolution of the camera

1. Press [MENU] to activate the setting menu.

2. Press [▶] or [◀], select [System].

3. Press [ENTER] to enter.

4. Press [▲] or [▼], select [Output Mode].

5. Press [ENTER] to enter.

6. Press [▶] or [◀], select resolution.

7. Press [MENU] to exit.

6.3 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]

6.4 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]

6.5 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

6.6 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.

6.7 I would like to zoom in/out images

6.7.1 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.

6.7.2 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.

6.8 I would like to adjust the focal length

6.8.1 Auto tune

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

6.8.2 Manual focus

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

6.9 I would like to adjust the AF speed

6.9.1 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.

6.9.2 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.

6.10 I would like to set the image mode

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

6.11 I would like to freeze images

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

6.12 I would like to rotate the image

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

6.13 I would like to change the camera direction

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

6.14 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(IR SELECT)



Setting	Function Descriptions
	IR ID=1
	IR ID=2
	IR ID=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.	Boot without power signal	1. Make sure you have plugged in the power cord.
2.	There is no image output from VC-B20D	1. Check the power. 2. Make sure the display supports the output resolution; in general, the resolution is 1080p60/720p60. 3. Replace the cables and make sure they are not faulty.
3.	VC-B20D image is severely delayed	Please use 1080p or 720p 60/50 Hz signals rather than 25/30 Hz signals.
4.	VC-B20D cannot be operated by remote control	1. Please confirm if the Camera select on the remote control can be used together with the DIP switch IR setting 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.
5.	The device cannot be controlled with Codec	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.